Til
Ministeriet for Børn og Undervisning

Dokumenttype
Rapport

Dato
Juni 2013

KORTLÆGNING AF CURRICULA I SAMMEN-LIGNELIGE LANDE

RAMBØLL

KORTLÆGNING AF CURRICULA I SAMMENLIGNELIGE LANDE

INDHOLD

BILAG

Rambøll
Hannemanns Allé 53
DK-2300 København S
T +45 5161 1000
F +45 5161 1001
www.ramboll.dk

1. INDLEDNING

Rambøll præsenterer i denne rapport en kortlægning af curricula i sammenlignelige lande.

1.1 Formål og rækkevidde

Rapporten skal ses i lyset af regeringens udspil til en folkeskolereform, der lægger op til en revision og forenkling af Fælles Mål – i første omgang for dansk og matematik – siden for de øvrige fag. I den forbindelse skal kortlægningen afdække erfaringer med curricula i lande, der kan sammenlignes med Danmark.

Ud over dette overordnede fokus har kortlægningen specifikt til formål at belyse, hvordan disse lande arbejder med kompetencemål, dvs. mål, der beskriver den type og det niveau af færdigheder, som eleven forventes at have på et specifikt klassetrin inden for et specifikt fag. Populært sagt sættes kompetencemål (hvad eleven skal kunne) ofte over for indholdsmål (hvad der skal undervises i).

Kortlægningen bygger på en tilsvarende tilgang, der blev gennemført for Skolens rejsehold i maj 2010. Her belyste Rambøll fagrækker og curriculum i de nordiske skolesystemer, nærmere bestemt Finland, Norge, Sverige og Danmark.

Denne rapport fokuserer på fire lande; Østrig, Tyskland, Ontario (Canada) og Skotland. Rambøll har for hvert land gennemført dokumentstudier af fagrækker, curriculum, grundlæggende opbygning af skolesystem, relevant forskning mv. Herudover er der gennemført ca. tre interview i hvert land med eksperter og repræsentanter for de respektive landes skolemyndigheder. Datamaterialet er beskrevet på engelsk i selvstændige landerapporter. I denne rapport har vi skrevet en kort sammenfatning på dansk og gennemført en tværgående analyse af curriculum og mål i hvert af de fire lande.

Vi inddrager også enkelte steder erfaringer fra Danmark og Norden med udgangspunkt i ajourførte landerapporter fra kortlægningen af curriculum i 2010. Kortlægningen er dog gennemført under betydeligt tidspres i perioden fra uge 11 til uge 17. Derfor har der ikke været mulighed for at trække relevante paralleller til de nordiske lande i optimalt omfang.

De originale landerapporter er udarbejdet på engelsk og indgår som selvstændigt bilag. Derfor er der enkelte steder anvendt engelske termer. Endelig er det vigtigt at pointere, at der netop er tale om en kortlægning, som med en længere tidshorisont kunne være nået dybere i analyser af målene på tværs af de fire lande.

Kortlægningens fokus er særligt på fagene modersmål og matematik.

Ud over de engelske landerapporter er der vedhæftet notater for curriculum og fagrækker i de nordiske lande (Norge, Sverige og Finland). Disse er ajourførte sammenlignet med udgaverne fra 2010, hvor særligt den norske og den svenske udgave indeholder nye elementer.

1.2 Rapportens opbygning og indhold

Vi præsenterer først de enkelte lande. I første omgang ser vi på Østrigs skolesystem, fagrække, curriculum samt typer af mål. Afsnittet om Østrig beskriver også, hvordan arbejdet med mål i grundskolen spiller sammen med den tilsvarende indsats i henholdsvis førskolen og i overgangen til ungdomsuddannelsessystemet. Afsnittet afsluttes med at undersøge tilgangen til evaluering og arbejdet med it-baseret undervisning. Herefter følger tilsvarende afsnit for Tyskland, Ontario og Skotland.

Rapporten afsluttes med et tværgående afsnit, som identificerer forskelle og ligheder i såvel curricula som tilgang til kompetencemål.

2. ØSTRIGS SKOLESYSTEM

I det følgende præsenteres skolesystemet i Østrig.

2.1 Styringsmodel

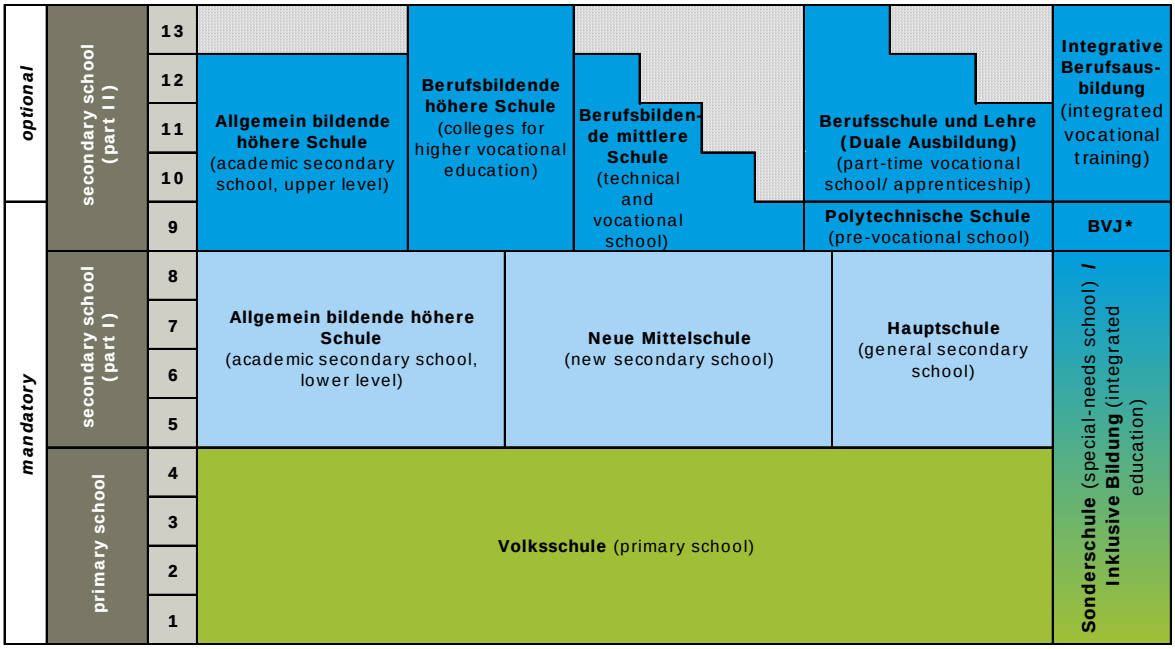
I Østrig er folkeskolen et statsligt anliggende. Den centrale aktør i reguleringen af folkeskoleområdet er Bundesministerium für Unterricht, Kunst und Kultur (BMUKK). Ministeriet fastlægger lovgrundlag, curriculum, skolestruktur og godkender undervisningsmateriale. Østrig har således en stærk central styring af folkeskolen.

I forbundslandene eksisterer regionale råd, Landesschulräte, der er underordnet BMUKK. Disse råd har ansvar for tilsyn og administration af skolerne, herunder vedligeholdelse, skolelukninger mv.

Der findes på de enkelte skoler lokale råd, der har kompetence til at træffe beslutninger om antallet af timer, fag og økonomi i nærmere bestemt omfang. Denne – begrænsede – autonomi blev introduceret for at give mulighed for at tilpasse skoletilbuddet til lokale behov hos forældre og elever.

I Østrig starter børnene det niårige skoleforløb, når de er seks år. Den østrigske skolestruktur er kompleks og favner flere forskellige skoletyper, hvor børnene forholdsvis tidligt skal vælge, hvilken retning deres skoleforløb skal tage. Det er illustreret i figuren nedenfor.

Figur 2.1: Overblik over det østrigske skolesystem



*** BVJ = Berufsvorbereitungsjahr (pre-vocational year)**

De første fire år af skoleforløbet er dog ens for alle børn (*Volksschule* – eller primary school*)*. Den anden del af skoleforløbet (secondary school) kan deles i to. I den første del vælger eleverne mellem fire forskellige skoletyper:

- *Hauptschule* er det grundlæggende tilbud, hvor undervisningen niveaudeles. Curriculum for de dygtigste elever svarer til det laveste niveau i *Gymnasium.*
- *Neue Mittelschule* blev i forlængelse af et skoleudviklingsforsøg i 2012 et grundlæggende tilbud. Tanken er, at denne skoleform på længere sigt skal erstatte *Hauptschule.* Denne skoleform vil undgå, at eleverne vælger uddannelsesspor for tidligt, og har til formål at tilbyde en mere individualiseret og differentieret læringskultur.

- *Allgemein bildende höhere Schule* tilbyder eleverne forskelligt uddannelsesmæssigt fokus.
- *Sonderschule* er for elever med særlige behov.

Man tilstræber, at det er let at skifte mellem de forskellige skoletyper. Frem mod skoleåret 2015/2016 skal Neue Mittelschule erstatte Hauptschule. Allgemein bildende höhere Schule får samme tilbud, men er ikke forpligtet.

I den anden del af skoleforløbet er der igen forskellige valgmuligheder for eleverne, som ikke er begrænset af valget i den første del. Der er dog nogle skoletyper, hvor adgangen reelt begrænses af optagelsesprøver eller lignende:

- *Polytechnische Schule* favner et obligatorisk klassetrin efter 8. klasse og tilbyder eleverne en erhvervsrettet undervisning.
- *Duale Ausbildung* er et to- til fireårigt tilbud i forlængelse af *Polytechnische Schule,* hvor undervisningen kombineres med praktik.
- *Berufsbildende mittlere Schule* er et erhvervsrettet tilbud, der varer fra et til fire år.
- *Berufsbildende höhere Schule* tilbyder både et alment undervisningstilbud samt et specifikt erhvervsrettet og varer fem år.
- *Allgemein bildende höhere Schule* er et femårigt alment undervisningstilbud med en akademisk profil. Både denne og *Berufsbildende höhere Schule* giver adgang til universitetsniveau.
- *Berufsvorbereitungsjahr (BVJ); Integrative Berufsausbildung* tilbyder eleverne et forberedende forløb forud for et erhvervsuddannelsestilbud.

2.2 Fagrække og minimumstimetal

Som følge af den statslige styring af grundskolen har Østrig en centralt fastlagt fagrække. Den er vist i tabellen herunder. I søjlen til venstre ses den obligatoriske fagrække for de fire år, som alle elever skal igennem. Herudover har vi vist fagrækken for den skoleform, der fremover vil blive dominerende (*Neue Mittelschule)* samt *Allgemein bildende höhere Schule.* Fagrækkebeskrivelsen omfatter således udelukkende de første otte år af elevernes skolegang.

Tabel 2.1: Fagrække

Volksschule	Neue Mittelschule	Allgemein bildende höhere Schule (laveste niveau)
Tysk	Tysk	Tysk
Matematik	Matematik	Matematik
Naturfag	Biologi og miljø	Biologi og miljø
Musik	Samfundsfag og historie	Fysik
Kunst	Fremmedsprog	Fremmedsprog
Håndarbejde	Geografi og samfundsøkonomi	Latin
Idræt	Kunst	Samfundsfag og historie
	Arbejdsmarked, driftsøkonomi eller tekniske fag	Geografi og økonomi
	Håndarbejde	Kunst
	Husholdningsøkonomi	Arbejdsmarked, driftsøkonomi eller tekniske fag
	Idræt	Håndarbejde
	Religion og etik	
	Obligatorisk opgave om arbejdsmarkedet, herunder virksomhedspraktik	

I de nedenstående tabeller viser vi, hvor mange timer der er fastlagt centralt i fagene tysk og matematik.

Tabel 2.2: Timetal i tysk

		Primary school				Secondary school			
		1	2	3	4	5	6	7	8
Regular hours German	basic ability level (General Secondary School)	7	7	7	7	5	4	4	4
	comprehensive ability level (New Secondary School)					4	4	4	4
	high ability level (Academic Secondary School)					4	4	4	4
Regular hours German (autonomous)	basic ability level (General Secondary School)	6-8	6-8	6-8	6-8	15-21			
	comprehensive ability level (New Secondary School)	overall: 30-34				11-22			
	high ability level (Academic Secondary School)					15-21			

Det fremgår, at der stort set ingen forskel er i antallet af timer på tværs af de forskellige skoletyper på mellemtrinnet (secondary school). Herudover har vi vist timetallet for de skoler, der vælger at benytte sig af muligheden for (begrænset) autonomi. Her er der skoler, der benytter sig af anledningen til at øge timetallet i tysk. I forhold til matematik er timetallet også homogent på tværs af skoletyper. Det viser sig dog, at der er skoler, der har valgt at bruge autonomien til at reducere antallet af timer i matematik. Disse skoler skal dog øge timetallet i andre fag tilsvarende.

Tabel 2.3: Timetal i matematik

		Primary school				Secondary school			
		1	2	3	4	5	6	7	8
Regular hours Mathematics	basic ability level (General Secondary School)	4	4	4	4	4	4	4	6*
	comprehensive ability level (New Secondary School)					4	4	4	3
	high ability level (Academic Secondary School)					4	4	3	3
Regular hours Mathematics (autonomous)	basic ability level (General Secondary School)	3-5	3-5	3-5	3-5	16-26*			
	comprehensive ability level (New Secondary School)	overall: 14-18				10-20			
	high ability level (Academic Secondary School)					13-18			

2.3 Curriculum – mål og indhold

Det nuværende curriculum har eksisteret siden 1986. I udgangspunktet er curriculum i Østrig bindende for skolerne ift. mål, fag og antallet af timer. Det centrale dokument er *Lehrplan der Volksschule,* der for hvert fag har følgende grundstruktur:

1. Beskrivelse af den grundlæggende uddannelses- og undervisningsopgave
2. Beskrivelse af underområder
3. Beskrivelse af delområder for hvert underområde i form af mål
4. Didaktiske grundprincipper.

I *Lehrplan* beskrives altså inden for hvert fag den grundlæggende uddannelses- og undervisningsopgave. Eksempelvis skal matematikundervisningen i løbet af de fire første år give eleverne mulighed for at erfare matematikkens praktiske nytteværdi. Undervisningen i tysk har først nogle brede formålserklæringer (fx at korrekt sproganvendelse både skriftligt og mundligt skal øves og

fæstne sig), hvorefter de enkelte underområder beskrives (tale, læse, skrive, udarbejdelse af tekster, retstavning og sproglig refleksion). Herefter beskrives *Lehrstoff* for de enkelte underområder. Her beskrives et delområde inden for et underområde. Fx arbejdes der med *motivation* inden for underområdet retstavning. Dette konkretiseres ved, at indsatsen i skolen skal fremme elevernes interesse i at skrive korrekt tysk.

Efter beskrivelsen underområder og delområder beskrives en række didaktiske grundprincipper for hvert underområde. Inden for underområdet *Sprechen* findes en halv sides tekst, der beskriver samtalens funktion og principper for øvelser – eksempelvis at de fleste elever har brug for målrettede øvelser for at udvikle talesproget, hvorfor standardiserede øvelser skal undgås.

De matematiske didaktiske grundprincipper er mere tværgående (*Mathematisches Variation* eller *Funktion des Übens).* Eksempelvis beskrives det, hvordan lærerne kan arbejde med brugen af øvelser i opbygning af regnefærdigheder, sikkerhed i begrebsanvendelse mv. Der gives eksempler (*Hinweise*) på, hvordan man kan arbejde med de enkelte underområder som geometri eller størrelser.

Beskrivelserne af områder, mål og didaktiske principper er ikke udtryk for et sammenhængende målsystem. De er generelt kendetegnet ved at indeholde rummelige beskrivelser, som både retter sig mod lærernes undervisning, og hvad eleverne forventes at skulle kunne. Sidstnævnt er dog ikke formuleret i specifikke kompetencetermer, men også i bredere formuleringer om, hvilke færdigheder eleverne forventes at mestre.

Dette forsøgte man at gøre op med i 2009, hvor man indførte uddannelsesstandarder (*Bildungsstandards)*, der formuleres i kompetencetermer og tilstræber at præcisere, hvad eleverne skal kunne. Uddannelsesstandarderne er også bindende for skolerne og er udtryk for en konkretisering af curriculum i kompetencemodeller. Standarderne har til formål at eksplicitere, hvad eleverne skal kunne i forskellige fag på fjerde (tysk og matematik) og ottende klassetrin (tysk, matematik, engelsk og latin). Man var inspireret af kompetencebegrebet, som det defineres af Franz E. Weinert, hvor kompetence forstås som motivation på den ene side og evnen til at løse problemer fleksibelt og ansvarligt på den anden.

Logikken er, at der inden for hvert fag defineres nogle overordnede kompetenceområder. Herefter bliver disse kompetenceområder yderligere konkretiseret i et første trin, der for nogle områders vedkommende opdeles yderligere. Tabellen herunder giver et eksempel inden for tysk på fjerde klassetrin.

Tabel 2.4: Operationalisering af kompetenceområder inden for tysk på fjerde klassetrin

Generelle kompetenceområder	Første konkretisering	Videre konkretisering
Læse og håndtere tekst og medier	Stabilisere og fordybe læseinteresse og motivation	Vælge bøger og tekst i forskellige medier efter egen interesse

Grundlæggende er det de samme kompetenceområder for tysk i såvel fjerde som ottende klasse. Derimod er den matematiske kompetencemodel mere kompleks på ottende klassetrin. På fjerde klassetrin kombineres fire generelle matematiske kompetenceområder med fire indholdsområder.

Tabel 2.5: Kompetencemodel i matematik på fjerde klassetrin

Generel matematisk kompetence	Indholdsområder
Modellering	Arbejde med tal
Beregninger	Arbejde med beregninger
Kommunikation	Arbejde med metoder
Problemløsning	Arbejde med niveau og rum

I ottende klasse anvendes en tredimensionel kompetenceforståelse, hvor hvert område konkretiseres. Der er et handlingselement, et indholdselement samt et kompleksitetselement. I tabellen

herunder giver vi eksempler på alle tre dimensioner. Principielt indeholder den østrigske kompetencemodel for matematik 48 matematiske kompetencer.

Tabel 2.6: Eksempler fra kompetencemodel på 8. klassetrin

Handlingselement	Konkretisering
Fortolke	Læse grafer og tabeller Fortolke resultater i en kontekst
Indhold	Konkretisering
Tal og størrelser	Naturlige, rationelle tal Regler for beregninger
Kompleksitet	Konkretisering
Refleksiv viden	Reflektere over metoder, modeller, løsninger Fortolke, argumentere, ræsonnere

Det fremgår, at undervisningstandarderne er mere systematiske end den overordnede beskrivelse af fag, underområder og delområder i læreplanen, hvor ambitionen er at konkretisere målene på en systematisk måde ud fra en kompetencebaseret tænkning. Mange mål er dog også i curriculum formuleret som evner, færdigheder, handlinger etc., som ikke kun handler om undervisningen.

Spørgsmålet er, om Østrig når i land, hvis målet er at udarbejde mål, der ud fra en kompetencetænkning beskriver, hvad eleverne skal kunne. Baseret på eksemplerne ovenfor ses det, at nogle af målene fortsat er generelle. Tilsvarende kan man hævde, at målene siger noget om, hvad eleverne skal vide og være i stand til og mindre om, hvor gode de er til det. Endelig er der ikke en kumulativ tilgang til arbejdet med mål. Eksempelvis har både elever på fjerde og ottende klassetrin et mål om at skrive korrekt. Der stilles naturligvis større krav til korrekt tysk på ottende klassetrin, men den grundlæggende målformulering er den samme.

2.4 Fokusområder

I Østrig blev der i 2009 defineret et uddannelsesmæssigt rammeværk for førskoleundervisningen. Her defineres fem kompetenceområder, som er relevante, før børnene starter i skolen:

1. Personlige kompetencer som positiv selvopfattelse og autonomi.
2. Sociale kompetencer som empati og kapacitet til at handle og evaluere i sociale sammenhænge.
3. Emnekompetence, som fordrer evnen til at udforske, forstå og bruge sin fantasi.
4. Indlærings- eller metodiske kompetencer, som handler om bevidsthed om læreprocesser og kendskabet til strategier for indlæring.
5. Metakompetence, som fokuserer på evnen til at evaluere egne kompetencer, udviklingen af dem og bruge dem adækvat.

Der er seks undervisningsområder, som skal bidrage til, at disse kompetencer udvikles:

- Følelser og sociale relationer
- Etik og samfund
- Sprog og kommunikation
- Aktiviteter og sundhed
- Æstetik og kreativitet
- Natur og teknik.

Disse områder kan genfindes i læreplanen for folkeskolen. Også her beskrives områder og mål samt didaktiske principper for førskoleundervisningen. Beskrivelsen af indsatsen er således beskrevet inden for den samme formelle ramme med indholdsmæssig sammenhæng og samme mållogik.

I forhold til overgangen til ungdomsuddannelse er det østrigske system som nævnt præget af, at eleverne forholdsvis tidligt vælger spor, idet man allerede efter de fire første år vælger retning. Det betyder på den ene side, at der allerede i grundskolen etableres en tæt kobling mellem mål i grundforløbet og mål, når eleverne har valgt retning. Der er dog en beslægtet logik i læringsmålene i grundforløbet og eksempelvis tysk og matematik på *Polytechnische Schule*. Her har man eksempelvis kerneområder som mundtlig kommunikation, der brydes ned i mere detaljerede mål, som både omfatter undervisningsrettede mål (nedbryde kommunikationsbarrierer gennem rollespil) og kompetencebaserede (formulere sin egen mening).

Ser vi på, hvordan det østrigske curriculum, herunder læringsmål, fungerer som rettesnor for lærernes forberedelse, gennemførelse og evaluering af undervisningen, har vi ovenfor set, at der præsenteres didaktiske principper med konkrete forslag til, både hvordan undervisningen kan planlægges og gennemføres, og hvad eleverne skal kunne. Principperne er dog generelt formuleret og er i den forstand primært et rammeværk, der kan inspirere lærerne. Selv om lærerne er forpligtet til både at implementere curriculum og uddannelsesstandarder i planlægningen og gennemførelse af undervisningen, vurderes det, at lærerne reelt har stor autonomi i tilrettelæggelsen af deres undervisning, og at de statslige kontrolmuligheder aktuelt er begrænsede.

BMUKK har dog etableret en hjemmeside (www.gemeinsamlernen.at), der både henviser til læreplaner, beskriver uddannelsesstandarder og indeholder konkrete forslag til, hvordan lærerne kan planlægge undervisningen. I forhold til tysk kan det være *Alphabetisieren üben* eller for matematik *Bauaufgabe "Fussgängerzone".*

I Østrig er involveringen af forældre og aktiv elevinddragelse stort set ikke nævnt. Digitaliserede læringsmål eller e-learning spiller en begrænset rolle i det østrigske curriculum. Der nævnes grundlæggende meget få digitale læringsmål, og nævnes de, er det som oftest i meget generelle vendinger (at eleverne skal blive kompetente it-brugere). Det samme billede gælder for eksempelvis *Allgemein bildende höhere Schule*, hvor man dog er en smule mere specifik og eksempelvis formulerer, at eleverne skal blive i stand til at anvende elektroniske hjælpemidler. Det samme billede gælder for gemeinsamlernen.at, hvor der også er få eksempler på e-learning.

2.5 Evalueringspraksis

Østrig deltager i en række internationale skoleundersøgelser som TIMSS, TALIS, PISA mv. Særligt PISA-undersøgelserne har haft en væsentlig betydning. I 2000 viste de første PISA-resultater en fin placering til Østrig, men det viste sig, at der havde været fejl i både stikprøveudvælgelsen og dataindsamlingen. Efter korrektionerne faldt Østrigs relative placering betydeligt. På den baggrund så man en intensiv debat om det østrigske skolesystem. Det er blandt andet i dette perspektiv, at en ændring i de parlamentariske spilleregler skal ses. En regel om, at lovgivningen på skoleområdet skulle vedtages med to tredjedeles flertal i parlamentet blev ændret for at kunne gennemføre skoleudviklingsforsøg mere fleksibelt. Udviklingen af uddannelsesstandarderne kan også ses i dette lys.

Med uddannelsesstandarderne introducerede man også nationale test på fjerde og ottende klassetrin. Det er forskellige fag, der testes. I 2012 var det matematik, mens det i 2013 er tysk og i 2014 engelsk. De anvendte test udvikles af det nationale institut *Bundesinstitut für Bildungsforschung, Innovation und Entwicklung des österreichischen Schulwesens (BIFIE).* Testresultaterne bruges til at udvikle kvaliteten af det østrigske skolevæsen, og skolerne opfordres til at bruge resultaterne til faglig refleksion. Lærerne tilbydes kurser i brugen og fortolkningen af test. Illustrativt taler den østrigske undervisningsminister om udviklingen af en "feedbackkultur" i sin præsentation af undervisningstandarderne.

3. TYSKLANDS SKOLESYSTEM

3.1 Styringsmodel

Tysklands skolesystem kan bedst betegnes som særdeles heterogent. Den høje grad af forskellighed skyldes primært, at den overvejende del af ansvaret for skolesystemet ligger hos de tyske delstater (Länder), se mere herom nedenfor.

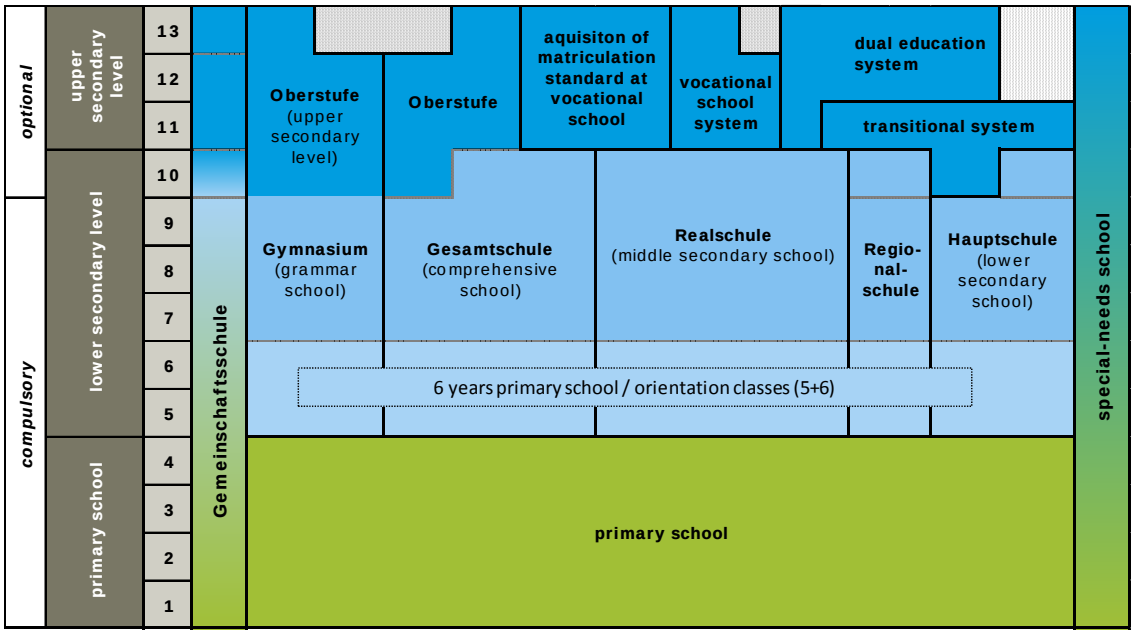
Der er imidlertid et par fællestræk. For det første at obligatorisk skolegang (skolepligten) starter ved 6-års alderen og derefter varer ni år[1]. For det andet er grundskole (primary education) og det efterfølgende sekundære trin (lower secondary education) opdelt således, at undervisningen gennemføres i regi af forskellige *skoletyper*. Der er således ikke umiddelbart tale om den samme form for enhedsskole i Tyskland, som kendes fra de nordiske lande. Opdelingen skal ses i lyset af, at de forskellige skoletyper repræsenterer forskellige veje i uddannelsessystemet.

For så vidt angår styringsmodel, så ligger langt den overvejende del af det formelle ansvar hos de 16 tyske delstater. På det føderale niveau er der udelukkende mulighed for at fastlægge nogle overordnede rammebetingelser for det tyske skolevæsen, fx i form af koordinerende tiltag, som delstaterne skal være enige om. Derimod fastlægges lovgivning, beslutninger og regelsæt om skoler og indhold af de enkelte delstater. Det gælder temaer som skolestruktur, curricula, eksaminer, lærerkvalifikationer mv. For en række administrative forhold såsom bygninger, udgifter til materialer mv. er ansvaret lagt hos kommunerne.

Selv om styringen af de tyske skoler i vid udstrækning er decentraliseret til de tyske delstater, foregår der løbende koordination mellem delstaterne for at sikre en vis grad af ensartethed i relation til kvalitetsstandarder, certifikater/beviser mv. Samarbejdsorganet mellem undervisningsministre/-senatorer fra de tyske delstater hedder *Kultusministerkonferenz* (KMK), og organet har en vigtig koordinerende/samordnende rolle, idet der ikke findes føderal lovgivning på uddannelsesområdet i Tyskland. KMK er bl.a. ansvarlig for at forestå internationale undersøgelser på Tysklands vegne, fx PISA og TIMSS. Derudover er KMK forum for udarbejdelse af såkaldte *uddannelsesstandarder*, som er bindende for delstaterne. Vi vender tilbage til dette nedenfor[2].

En oversigt over skolestrukturen (fra grundskole til og med ungdomsuddannelse) er gengivet i figuren nedenfor.

Figur 3.1: Skolesystemet i Tyskland



[1] 10 år i fem af delstaterne.

[2] Læs mere om KMK her: www.kmk.org.

Illustrationen ovenfor viser mangfoldigheden i det tyske skolesystem, samt at tyske elever relativt hurtigt overgår til forskellige skoletyper, som det blev nævnt ovenfor.

Grundskolen (*Grundschule*) varer typisk fra 1. til 4. skoleår med enkelte afvigelser, idet grundskolen går helt til 6. klassetrin i delstaterne Berlin og Brandenburg. Dette niveau benævnes *Primarstufe*. Efter grundskolen kan forskellige retninger vælges frem til 9. og 10. klassetrin. I forsimplede termer er det muligt at tage skoletyper, der enten er specialiseret i en erhvervsfaglig eller en gymnasial retning, som det kendes fra en række andre lande. De forskellige skoletyper fører alle frem til niveauet *Sekundarstufe I*, hvorefter det er muligt at fortsætte videre på ungdomsuddannelsesniveauet – *Sekundarstufe II*. Der henvises til en mere detaljeret beskrivelse i det tyske landenotat.

I skoleåret 2011/2012 gik 9,3 mio. elever i tyske skoler, inklusiv specialskoler. Godt 8 pct. af disse frekventerede privatskoler. Den typiske klassestørrelse i det tyske skolesystem er på 20 elever i grundskolen (primary school), og 30 elever i skoler på det sekundære niveau. 8 pct. af eleverne har i gennemsnit anden etnisk baggrund med store variationer mellem skoletyper.

Sammenfattende er det vanskeligt at tale om ét tysk skolesystem, idet der er betydelige forskelle delstaterne imellem. I det følgende er det derfor valgt at gøre brug af eksempler fra udvalgte delstater, nemlig Bayern, Hessen og Slesvig-Holsten.

3.2 Fagrække og minimumstimetal

Fagrækken i det tyske skolesystem er ikke fastlagt på føderalt niveau, og ansvaret er således også på dette område decentraliseret til delstaterne. For alle delstater er der imidlertid en række fællesnævnere, således at følgende fag indgår i fagrækken: Tysk, matematik, et fremmedsprog, et science-fag, religion eller etik, kunst eller musik samt idræt. Derudover er der visse variationer på tværs af klassetrin, skoletyper og – som nævnt – delstater. Det er imidlertid vurderingen, at der er mange fællesnævnere, for så vidt angår fagrække.

Eksemplet nedenfor omfatter obligatoriske fag (inklusive valgfag) fra skolesystemet i Bayern. Eksemplet omfatter forskellige niveauer frem til ungdomsuddannelse, der tilnærmelsesvis kan sidestilles med indskoling, mellemtrin og (gymnasial) udskoling i Danmark.

Tabel 3.1: Fagrækken i Tyskland (Bayern som eksempel)

Grundskole (Grundschule)	Mellemskole (Mittelschule)	Udskoling (Gymnasium)
Tysk	Tysk	Tysk
Matematik	Matematik	Matematik
”Heimat- und Sachunterricht” (mix af geografi- og science-fag)	Biologi, kemi eller fysik	Historie
Fremmedsprog	Historie, samfundsfag og geografi	Samfundsfag
Musik	Engelsk	Musik eller kunst
Kunst (billedkunst)	Musik	Biologi, kemi eller fysik
Håndarbejde	Kunst (billedkunst)	Andet science-fag eller informatik
Idræt	Arbejde, økonomi og teknik	Geografi eller økonomi og jura
Religion	Håndarbejde	Religion/Etik
	Kommunikation	
	Hjemkundskab	
	Idræt	
	Religion/Etik	

Regler vedrørende timetal er indlysende tæt knyttet til fagrækken, da fagrække og antal timer i sammenhæng udgør betydelige rammebetingelser for undervisning i skolen.

Som det er tilfældet for fagrækken, bestemmes timetalsregler i den tyske skole også af delstaterne. I nedenstående tabeller har vi indsat eksempler på krav til timetal i fagene tysk og matematik i delstaterne Bayern og Hessen.

Tabel 3.2: Timetal (ugentligt) i tysk og matematik i delstaten Bayern

		Primary school				Secondary school (part I) Mittelschule / Realschule / Gymnasium					
		1	2	3	4	5	6	7	8	9	10
Minimum hours German	basic ability level (primary school, Hauptschule/ Mittelschule)	7	6	6	6	5	5	5	5	4	5
	medium ability level (Realschule)					5	5	4	4	4	4
	high ability level (Gymnasium)					5	4	4	4	4	3
Minimum mum-hours Math	basic ability level (primary school, Hauptschule/ Mittelschule)	5	5	5	5	5	5	5	4	5	5
	medium ability level (Realschule)					5	5	4	4	5	5
	high ability level (Gymnasium)					4	4	4	3	4	3

Tabel 3.3: Timetal (ugentligt) i tysk og matematik i delstaten Hessen

		Primary school				Secondary school (part I) Mittelschule / Realschule / Gymnasium					
		1	2	3	4	5	6	7	8	9	10
Minimum hours German	basic ability level (primary school, Hauptschule/ Mittelschule)	12		10		14			12		
	medium ability level (Realschule)					14			11		
	high ability level (Gymnasium)					10		15			
Minimum mum-hours Math	basic ability level (primary school, Hauptschule/ Mittelschule)	10		10		14			12		
	medium ability level (Realschule)					12			12		
	high ability level (Gymnasium)					8		16			

Som de to eksempler viser, er der høj grad af overensstemmelse mellem timetalskravene i de to delstater. Afvigelserne forekommer over det samlede skoleforløb marginale. Generelt betragtes fagene tysk og matematik som de vigtigste i fagrækken, og de ugentlige timetal er udtryk for dette. I grundskolen udgør timetallet for de to fag halvdelen af det samlede antal timer. I de mindre klasser vægtes modersmålet højest, hvorefter timetallet for de to fag i højere grad ligger på samme niveau.

3.3 Curriculum – mål og indhold

Som det fremgik ovenfor, ligger ansvaret for den tyske skole i vid udstrækning hos de tyske delstater. Det føderale niveau spiller udelukkende en rolle som koordinerende og samordnende aktør i regi af KMK.

For så vidt angår curriculum – forstået som referencerammen for undervisningen i skolens fag i de tyske skoler – er det interessant at konstatere, at det føderale niveau trods alt har indtaget en vigtig, rammesættende funktion i de seneste 10 år, idet der er udviklet parallelle standarder/curricula på såvel føderalt niveau og delstatsniveau. "Parallelt" skal her forstås således, at de føderale retningslinjer ikke har højere status end retningslinjerne på delstatsniveau, men i stedet at de to sæt af retningslinjer skal fungere i tæt samspil.

Ovenstående skyldes, at det føderale samarbejdsorgan på uddannelsesområdet, KMK, i 2003 indledte et arbejde med at udvikle såkaldte uddannelsesstandarder (*Bildungsstandards*) som følge af utilfredsstillende resultater i internationale undersøgelser såsom TIMSS, PISA m.fl. De føderale uddannelsesstandarder er funderet i uddannelsesforskningen[3] og har til formål at give en retning (sætte et mål) for undervisningen, men også manøvrerum for planlægning på skole- og lærerniveau. Samtidig danner standarderne udgangspunkt for den monitorering, der finder sted på føderalt niveau. Monitorering af resultater og performance forestås af The Institute for Quality Development in Education (IQB) i Berlin.

Selv om det føderale niveau som tidligere nævnt ikke har en formel beslutningskompetence på skoleområdet, betragtes standarderne reelt som bindende for medlemsstaterne. Dette indebærer, at opnåelse af standarderne løbende monitoreres og vurderes. Omvendt skal standarderne ikke implementeres ens i alle delstater. Det er også Rambølls indtryk fra kortlægningen og dialog med eksperter på området, at implementeringen af standarderne foregår i forskellige tempi i de enkelte delstater.

En oversigt over de fag, hvor der findes *uddannelsesstandarder* i det tyske skolesystem, fremgår af tabellen nedenfor.

Tabel 3.4: Uddannelsesstandarder i det tyske skolesystem (fastlagt på føderalt niveau)

Uddannelsesniveau (skoletype)	Trin	Fag
Grundskole (primary school eller Grundschule)	4.	Tysk Matematik
Mellemtrin og udskoling (lower secondary school eller Hauptschule)	9.	Tysk Matematik Første fremmedsprog (engelsk eller fransk)
10. klasse (middle secondary school eller Realschule)	10.	Tysk Matematik Første fremmedsprog (engelsk eller fransk) Biologi Kemi Fysik
Gymnasium (grammar school eller Abitur)	12./13.	Tysk Matematik Fremmedsprog (engelsk eller fransk)

For alle de nævnte fag ovenfor på de respektive klassetrin er der udgivet en publikation, formuleret som en beslutning taget af KMK (*Beschlüsse der Kultusministerkonferenz*). Hver publikation indeholder ud over en indledning følgende tekster[4]:

- En oversigt over de centrale faglige områder i faget
- Overordnede kompetencebeskrivelser (baseret på de faglige områder)
- Standarder med to niveauer af konkretiseringer i form af tekster (se nedenfor)
- Forslag til en række opgaver med vejledning (koblet til kompetencer).

[3] Se fx Compare Klieme, E., et al. (2003). Zur Entwicklung nationaler Bildungsstandards. Eine Expertise. Frankfurt/Main: German Institute for International Educational Research.

[4] Via dette link til KMK er det muligt at downloade samtlige publikationer med *Bildungsstandards* for de forskellige fag, således at man kan få et indtryk af omfanget og detaljeringsniveauet; http://www.kmk.org/bildung-schule/qualitaetssicherung-in-schulen/bildungsstandards/dokumente.html.

Et eksempel på uddannelsesstandarder for faget tysk er gengivet i tabellen nedenfor (her gengivet i en oversættelse fra tysk til engelsk).

Tabel 3.5: Uddannelsesstandarder for tysk i grundskolen (op til 4. klassetrin)

Area of competence	First concretization	Further concretization
Talking and listening	- talking to others - listening and understanding - ...	- focus on to standard language (talking) - ... - express understanding (listening) - ...
Writing	- writing skills - writing correctly - ...	- having a clearly readable handwriting (skills) - ... - using strategies for correct writing (writing correctly) - ...
Reading, dealing with texts and media	- having reading skills - having reading experience - ...	- reading and understanding age adequate texts (skills) - ... - know and distinguish narrations, lyrical and scenic texts (experience) - ...
Language and analysis of language	- knowing fundamental language structures and concepts - working with words, sentences and texts - ...	- structure words and know possibilities to form words (working) - ...

Kilde: KMK (bearbejdet af Rambøll).

Der henvises til den tyske landerapport for et tilsvarende eksempel fra matematik.

Princippet i målformuleringen er følgende: Først defineres overordnede og grundlæggende kompetenceområder. Derefter to trin i yderligere konkretisering hen imod identificerbare og målbare færdigheder hos eleverne.

Curricula refererer i tysk sammenhæng til de tekster, der udarbejdes på *delstatsniveau* som retningsgivende for undervisningen i skolens fag. I Tyskland refererer curriculum typisk til begrebet læreplan (*Lehrplan*), som indeholder alle relevante oplysninger for det enkelte fag, dvs. timetal, mål, vejledning mv. Læreplanen er det væsentligste referencedokument for læreren i den tyske skole. Det bemærkes, at der grundet styringsmodellen er forskelle fra delstat til delstat, men det er Rambølls indtryk fra kortlægningen, at delstaterne har relativt sammenlignelige curricula, bl.a. som følge af den retning, som de føderale uddannelsesstandarder udstikker.

På delstatsniveau eksisterer separate curricula for de forskellige skoletyper. I Bayern er der således udarbejdet curricula for Grundschule, Mittelschule, Realschule og Gymnasium.

For de enkelte fag er der tilsvarende udarbejdet curricula (dvs. læreplaner). Disse indeholder, jf. ovenfor, læringsmål og undervisningsrelateret/didaktisk information. Selv om man i Tyskland har tildelt lærerne meget stor autonomi, er disse bindende for skoler og lærere.

Der henvises til det tyske landenotat for oversigter over læringsmål i tysk og matematik på forskellige klassetrin i Bayern, Hessen og Slesvig-Holsten. Det gør sig generelt gældende, at de undersøgte delstater endnu ikke fuldt ud har implementeret de føderale uddannelsesstandarder, men der er en bevægelse hen imod, at flere mål formuleres som egentlige kompetencemål. Det er i øvrigt en observation, at målene på tværs af delstater er relativt ens.

Det er vurderingen, at delstaten Hesse er meget langt med implementering af de føderale uddannelsesstandarder, og delstaten har således udviklet et "kernecurriculum" baseret på de føderale uddannelsesstandarder. Hessen har som delstat defineret ønskede kompetencer og konkretiseret disse for alle fag i delstatens skolesystem – fra grundskole til gymnasium. Kernecurriculum er veldokumenteret, systematisk og suppleret med guidelines (vejledning med konkrete eksempler samt undervisningsvejledning).

I nedenstående eksempel er gengivet et eksempel på kernecurriculum (*Das neue Kerncurriculum für Hessen*) for tysk i grundskolen. Sådanne faghæfter findes for alle fag for de øvrige skoletyper (Hauptschule, Realschule og Gymnasium)[5].

Tabel 3.6: Et eksempel på et curriculum – Hessens kernecurriculum, tysk, grundskole (faghæfte)

Del A	
Koncept – struktur – perspektiver	Den indledende del af faghæftet sætter rammen for det efterfølgende og at præsentere tankerne med det nye kernecurriculum. Curriculum skal være gældende for hele skoleforløbet og dermed være kumulativt. Der introduceres et klart kompetencebegreb med fokus på, hvad eleverne ved endt skolegang kan og burde kunne. Det slås fast, at kernecurriculum er en konkretisering af de føderale standarder.
Tværfaglige/ overordnede kompetencer	I denne – stadig indledende – del af publikationen præsenteres en række tværfaglige kompetencer, der er væsentlige for at lykkes med kernecurriculum: (1) personlige kompetencer, (2) sociale kompetencer, (3) læringskompetencer og (4) sproglige kompetencer. Disse tværfaglige kompetenceområder er hver især konkretiseret yderligere, så det fremgår tydeligt, hvad eleverne skal mestre. For sociale kompetencer handler det fx om samarbejde, konflikthåndtering og interkulturel forståelse. For sproglige kompetencer handler det om at kunne læse, skrive og kommunikere.
Del B	
Fagenes kompetenceorientering og bidrag til uddannelse	En kort tekst (1½ side), der betoner vigtigheden af fagets kompetenceområder for at kunne begå sig generelt.
Kompetenceområder for faget	I denne sektion præsenteres de væsentligste kompetenceområder for faget tysk i grundskolen. Følgende fire er defineret: 1. Tale og lytte (mundtlighed) 2. Skrive (skriftlighed) 3. Læse 4. Sprog og sprogbrug (undersøgende og reflekterende) Efterfølgende konkretiseres disse i korte tekster som *standarder*.
Indholdskoncept for faget	I denne sektion forklares det *indholdsmæssige* grundlag for faget. Dette sker i form af *vejledende perspektiver* (Leitperspektiven) og *indholdsområder* (Inhaltsfilter).
Uddannelsesstandarder og indholdsområder	I denne sektion uddybes en række uddannelsesstandarder (Bildungsstandards), struktureret som *kompetenceområder* (Kompetenzbereichen) samt *indholdsområder*. Det er i denne sektion, at curriculum bliver meget konkret i forhold til, hvad eleven kan/skal kunne ved afslutning af niveauet. Strukturen er de førnævnte overordnede kompetenceområder, hvor uddannelsesstandarderne konkretiserer, hvad eleven skal kunne. For så vidt angår kompetenceområdet *at skrive*, er følgende standarder/kompetencer angivet (eksempler): - For andre at have en læsbar håndskrift - At skrive flydende - At forme/gøre tekster nyttige og overskuelige - Osv. Lignende kompetencemål er formuleret for alle kompetenceområder (de fire helt overordnede) og en række indholdsområder (en del flere og mere konkretiserede).
Synopse	Oversigt over uddannelsesstander ved afslutning af grundskolen.

Hvor ovenstående i meget høj grad handler om kompetenceorientering og målformulering i relation til elevernes læring, er der som supplement til kernecurriculum formuleret *vejledninger* med

[5] For link til alle faghæfter i Hessens kernecurriculum, se her: http://www.iq.hessen.de/irj/IQ_Internet?uid=44540e7a-7f32-7821-f012-f31e2389e481.

lærere som primær målgruppe. Disse publikationer for fagene indeholder en beskrivelse af konceptet bag kernecurriculum, vejledning til planlægning af undervisningen samt referencer til materialer.

Det kan sammenfattende konstateres, at der i de seneste 10 år er gennemført betydelige ændringer i tænkningen bag curriculum i Tyskland – både føderalt og i delstaterne. Bindende føderale uddannelsesstandarder for fagene er introduceret og er ved at blive implementeret i delstaternes egne curricula. Samtidig er der også på delstatsniveau bindende curricula, som skoler og lærere skal følge. Tanken er, at de lokale curricula skal afspejle de nationale rammebetingelser, således at lærerne kun skal orientere sig ét sted. Det er samtidig en tendens, at man i Tyskland arbejder på at introducere egentlige kompetencemål[6].

3.4 Evalueringspraksis

Som i Østrig består hovedelementerne i den tyske evalueringstilgang af en kombination af de internationale undersøgelser og test, der er udviklet på baggrund af uddannelsesstandarderne. Tyskland deltager i de internationale undersøgelser som PISA, TIMSS, PIRLS etc. Herudover har *Institut zur Qualitätsentwicklung im Bildungswesen* udviklet test i forlængelse af uddannelsestandarderne (*Vergleichsarbeiten, VERA)*. Man måler i indskolingen ift. tysk og matematik, herefter udvides med fremmedsprog og til sidst i skoleforløbet også naturfag. På det føderale niveau ser man de internationale undersøgelser som TIMSS gå hånd i hånd med de nationale test. Samspillet mellem disse er tæt koordineret og indgår i en samlet plan, hvor man allerede i 2006 planlagde frekvenserne for henholdsvis internationale undersøgelser og test ud fra uddannelsesstandarderne helt frem til 2017. Disse test har både et formål på nationalt niveau, hvor de bruges til at sammenligne resultater på delstatsniveau. Herudover er resultaterne tilgængelige på skole- og klasseniveau, hvor skolerne forventes at anvende tallene til refleksion og udvikling. Der er tegn på, at en evalueringskultur er ved at udvikle sig – også på delstatsniveau – men der er også her indikationer på, at praksis varierer betydeligt fra skole til skole.

[6] Målhierarki og fokusområder er integreret i ovenstående tekst.

4. ONTARIOS SKOLESYSTEM

4.1 Styringsmodel

I Canada er "folkeskolen" et anliggende for den enkelte provins.

Undervisningen i Ontario tilbydes af fire offentligt finansierede skoletyper; engelske skoler, engelsk-katolske skoler, franske skoler samt fransk-katolske skoler. Curriculum er det samme for alle skoler. Dog er der specielle krav ved de afsluttende eksamener på de katolske skoler i relation til religionsundervisningen.

Eleverne skal gennemføre 12 års obligatorisk undervisning: 1. til 8. klasse i *elementary school* og 9. til 12. klasse i *secondary school*.

Tabel 4.1: Oversigt over Ontarios skolesystem

School types	Optional/Compulsory	Grades in Ontario school system	Ages beg. of school year (approx.)
Secondary school	Compulsory	12	17
		11	16
		10	15
		9	14
Elementary school		8	13
		7	12
		6	11
		5	10
		4	9
		3	8
		2	7
		1	6
Kindergarten	Optional	Senior kindergarten (SK)	5
		Junior kindergarten (JK)	4

Styringen af skoleområdet i Ontario er delt mellem tre forskellige niveauer; provinsniveau, distriktsniveau og det lokale skoleniveau.

Provinsniveau

På provinsniveau er styringsredskabet hovedsageligt lov om uddannelse og dertil hørende bekendtgørelser. I loven beskrives de opgaver og ansvarsområder, som henholdsvis provinsens undervisningsministerium (Ontario Ministry of Education), skolebestyrelser, skoleledere, lærere, forældre og elever har.

Undervisningsministeriet har ansvaret for at udarbejde curriculum, definere politikker og guidelines for skolebestyrelsesmedlemmer, undervisningsdirektører, skoleledere og andre *school board officials*, definere krav til afgangseksamen samt udarbejde lister over godkendte lærebøger og andre undervisningsmaterialer.

Ministeriet administrerer desuden supplerende love og bekendtgørelser, der vedrører uddannelsesområdet. Det er for eksempel regulering af skoleårets længde samt allokering af ressourcer til de enkelte skolebestyrelser.

Distriktsniveau
Der er 72 distrikter med egne skolebestyrelser i Ontario[7], der driver de offentligt finansierede skoler. Bestyrelserne har ansvaret for at:

- Tilbyde undervisning, der imødekommer lokalsamfundets behov, herunder behov for specialundervisning.
- Supervisere driften af de enkelte skoler og deres undervisningsprogrammer.
- Oprette et skoleråd på hver skole.
- Bestemme antallet, størrelsen og placeringen af skoler.
- Ansætte lærere og andet personale.
- Hjælpe lærere med at forbedre deres undervisningspraksis.
- Sikre, at skolerne efterlever den overordnede lov; *Education Act*.

Medlemmerne i bestyrelsen vælges i forbindelse med valg til kommunalbestyrelse.

Det skal i denne sammenhæng nævnes, at dele af ansvaret for lærernes faglige udvikling og implementering af gældende lovgivning/curriculum blev flyttet fra distriktsniveau til provinsniveau i forbindelse med *The Ontario Strategy* fra 2003. Den blev gennemført som et svar på utilfredsstillende faglige resultater i læsning og matematik på provinsniveau samt dårlige gennemførelsesprocenter fra high school. Et andet element i strategien var en reduktion i antallet af skoler.

Formålet var at skabe en højere grad af ensartethed samt skoledistrikter, der har økonomisk volumen til fx at understøtte lærernes faglige udvikling[8].

Lokalt niveau
På skoleniveau er det skolelederne, der er ansvarlige for organisering og drift af den enkelte skole, herunder administration af de budgetter der er uddelegeret af skolebestyrelsen. De er ligeledes ansvarlige for kvaliteten af undervisningen og disciplinen blandt eleverne.

4.2 Fagrækker og minimumstimetal

Fagrækken er bestemt på provinsniveau i lov om uddannelse og består af både obligatoriske samt valgfri fag. Alle skoler skal tilbyde de obligatoriske fag.

Den enkelte skolebestyrelse kan vælge at udvikle egne kurser på en specifik skole eller i en region, der tilgodeser lokale behov. Det forudsætter godkendelse i ministeriet.

Tabel 4.2: Oversigt over fagrække. Fag markeret med blåt er obligatoriske

Elementary School	Secondary School
Praktiske-kreative fag	Praktiske-kreative fag
Fransk som andetsprog	Business studies/forretningsstudier
Sundhed og idræt	Studie af Canada og verden
Sprog	Klassiske og internationale sprog
Matematik	It
Modersmål (canadisk eller fransk)	Engelsk
Videnskab og teknologi	Engelsk som andetsprog og engelsk literacy
Samfundsfag	Fransk som andetsprog
	Erhvervsvejledning
	Sundhed og idræt
	Tværfaglige forløb
	Matematik
	Modersmål

[7] Der er 4004 elementary og 909 secondary schools i Ontario.
[8] Ontario Strategy er kendetegnet ved fokus på strategier, der kan forbedre selve undervisningen, en omhyggelig og detaljeret opmærksomhed på implementering sammen med mulighederne for at afprøve ny ideer, en fælles strategi og ét fælles sæt af forventninger til lærere og elever samt lærernes støtte til reformerne.

Elementary School	Secondary School
	Hjemlandsstudier
	Programplanlægning og vurdering
	Videnskab
	Samfundsfag og humaniora
	Teknik/teknisk uddannelse

Inden for fagene tilbydes andre typer af kurser, der ikke indgår i figur 2. Dette fremgår af det enkelte fags curriculumhæfte. På 7. og 8. klassetrin kan skolerne tillige vælge at tilbyde eksperimenterende undervisningsforløb i form af *job shadowing* og *job twinning*[9].

For at bestå afgangseksamen (*The Ontario Secondary School Diploma OSSD*) skal man opfylde følgende krav; 30 point for 30 kurser i secondary school (18 obligatoriske kurser og 12 valgfrie kurser).

Tabel 4.3: Oversigt over obligatoriske kurser

Fag	Credits / Point
Engelsk	4
Matematik	3
Videnskab	2
Canadisk historie	1
Canadisk geografi	1
Kunst	1
Idræt og sundhed	1
Fransk som andetsprog	1
Karrierelære	0,5
Samfundslære	0,5
40 timers samfundsengagement	
Fuldførelse af literacy-krav[10]	

Undervisningen i Ontario er udelt til og med 8. skoleår. På 9. og 10. klassetrin (secondary school) vælger eleverne mellem tre typer af kurser inden for de enkelte fag, *academic, applied eller open course.* Der er udarbejdet overall samt specific expectations for de enkelte typer af kurser. Det er dog ikke alle tre kursustyper, de udbydes i alle fag.

Definition af de tre kursustyper
Academic courses Udvikler elevens viden og færdigheder gennem studie af teori og abstrakte problemer. Disse forløb fokuserer på de essentielle kernebegreber i det konkrete fag samt relaterede begreber. Praktisk anvendelse inddrages, når det passer ind i sammenhængen.
Applied courses Fokuserer på fagets essentielle kernebegreber og udvikler den studerendes viden og færdigheder gennem praktisk anvendelse og konkrete eksempler. Genkendelige situationer er brugt til at illustrere det faglige, og eleverne får flere muligheder for at få praksiserfaringer i forhold til de begreber og den teori, de undervises i.
Open courses Omfatter læringsmål, der passer til alle studerende. De er tilrettelagt med henblik på at udvide elevernes viden og færdigheder inden for fag, der afspejler deres interesser og forbereder dem til aktiv og udbytterig deltagelse i samfundet. Det er *ikke* tilrettelagt med henblik på at imødekomme specifikke krav fra universitet, college eller arbejdspladser.

[9] http://www.edu.gov.on.ca/eng/document/policy/os/ONSchools.pdf

[10] http://www.tdsb.on.ca/_site/viewitem.asp?siteid=126&menuid=498&pageid=387

På 11. og 12. klassetrin tilbydes fem typer af kurser inden for de enkelte fag; forberedelse til college, forberedelse til universitet, forberedelse til arbejdsplads/erhvervsliv samt åbent kursus. Der er også for disse kurser klare beskrivelser af, hvilken viden og færdigheder de enkelte kursustyper på disse klassetrin tilgodeser.

Elevernes valg inden for de fem kursustyper er, modsat 9. og 10. klassetrin, bindende i relation til fremtidige uddannelsesmuligheder.

Skolerne er ikke forpligtede til at tilbyde alle kursustyper inden for alle fag i secondary school, men der skal tilbydes både et tilstrækkeligt antal og en tilstrækkelig variation, der gør eleverne i stand til at imødekomme eksamenskravene, og som samtidig imødekommer behov og interesser.

For nogle af forløbene på 10., 11. og 12. klassetrin kræves der færdigheder på et bestemt fagligt niveau. Hvis en elev ønsker at skifte kursus, kan det derfor blive nødvendigt at tage et 9. klassesfag på et højere niveau, fx at supplere *Applied Math* med et forløb i *Academic Math*.

Minimumstimetal
I Ontarios skoler er der ikke minimumstimetal pr. skoleår for fagene. I primary school er den obligatoriske undervisningstid reguleret i lov om uddannelse, hvor der tildeles et samlet antal timer pr. fag i hele skoleforløbet. For matematik gælder det eksempelvis, at der skal være 5 timers undervisning ganget med 188 undervisningsdage om året = 940 timer. Der er op til den enkelte skole at beslutte, hvor mange af disse timer der skal placeres på det enkelte klassetrin.

Med få undtagelser gælder det, at fagene på 9. og 10. klassetrin samt på 11. og 12. klassetrin skal indeholde mindst 110 timer.

4.3 Curriculum – mål og indhold

Overordnet set karakteriserer specifikke kompetencebaserede læringsmål curriculum i Ontario. Målet er, at eleverne løbende tilegner sig nødvendig forståelse, nødvendige færdigheder og tilgange og processer inden for de enkelte fag. Der er opstillet klare og målbare læringsmål på hvert klassetrin, og der er en tydelig progression.

De opstillede mål gælder som udgangspunkt for alle elever, men i provinsens obligatoriske vurderings- og evalueringsmateriale (achievement chart), er der defineret fire niveauer for læring, og det forventes ikke, at alle elever når højeste niveau.

Curriculum
Der er udarbejdet curriculum for hvert fag i *elementary* og *secondary school*. Det indeholder følgende hovedelementer:

- *Curriculum area* (tre for hvert fag, et for 1.-8. kl., et for 9.-10. kl. og et for 11.-12. kl.)
- *Overall expectations* (på hvert klassetrin) + *Process expectations* (kun i matematik)
- *Specific expectations* (på hvert klassetrin)
- *Achievement Chart* (to for hvert fag, et for *elementary school* og et for *secondary school*).

Curriculum afspejler den viden og de færdigheder, som eleverne samlet set *skal* tilegne sig inden den afsluttende eksamen. De fire elementer uddybes i afsnit nedenfor.

Standarder
Standarder spiller en central rolle i tænkningen bag curriculums indhold og opbygning. Man bruger to typer af standarder:

- Content standards (indholdsstandarder)
- Performance standards (resultatstandarder).

Generelt er standarder en beskrivelse af de krævede faglige resultater konkretiseret ved hjælp af præstationsindikatorer. Det vil sige en beskrivelse af, hvad der skal til, for at et konkret mål er opnået.

Indholdsstandarder er lig de læringsmål i curriculum, der beskrives i *overall expectations* og *specific expectations.*

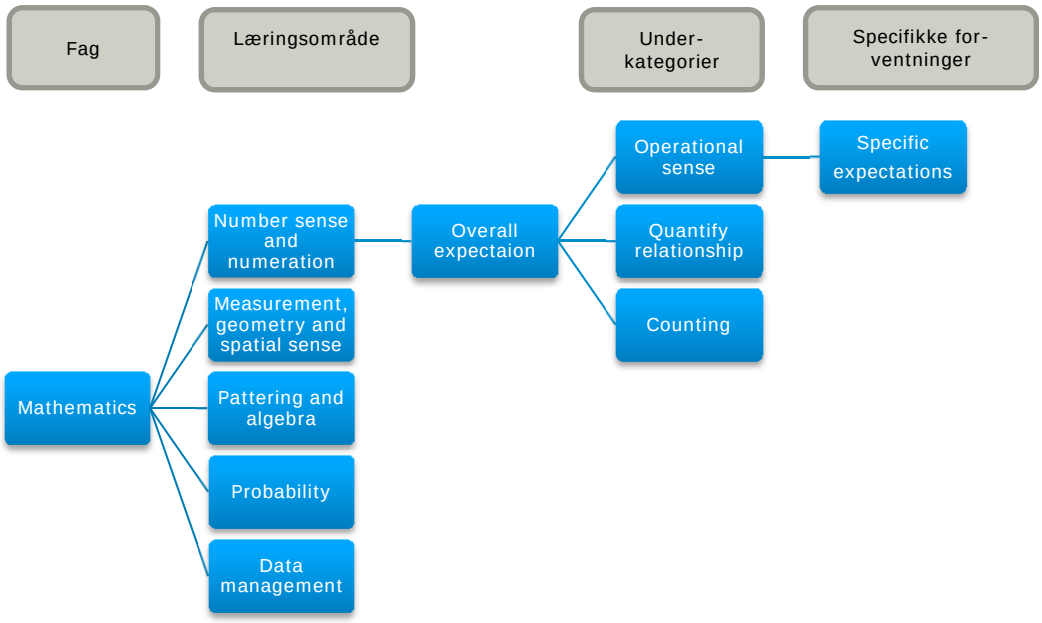
Resultatstandarder indgår i den del af curriculum, der vedrører vurdering og evaluering, kaldet *achievement chart*.

Læringsområder og underkategorier
Hvert fag er i det enkelte curriculum typisk opdelt i 4-5 læringsområder, der afspejler fagets grundlæggende viden og færdigheder. På dette niveau er der for matematik tale om:

- Number sense and numeration
- Measurement, geometry and spatial sense
- Patterning and algebra
- Data management
- Probability.

De enkelte læringsområder inddeles i underkategorier. Det er i relation til disse underkategorier, at der opstilles specifikke læringsmål, jf. nedenfor. Niveauerne inden for det enkelte fag er illustreret i figuren nedenfor.

Figur 4.1: Oversigt over niveauer inden for det enkelte fag (matematik 1. klassetrin)



Det forventes, at lærerne underviser på tværs af de enkelte læringsområder, da de er tæt forbundne, og det samtidig understøtter meningsfulde læringsforløb for eleverne, hvor faget ses som en helhed. For matematik er der en specifik forventning om, at lærerne så ofte som muligt relaterer undervisningen til situationer fra det virkelige liv.

Overall expectations (overordnede forventninger)
Overall expectations er det ene af to typer af læringsmål i Ontarios curriculum. Denne måltype beskriver i generelle vendinger den viden og de færdigheder, som eleverne forventes at kunne demonstrere ved afslutningen af hvert klassetrin. Disse generelle læringsmål er opstillet for hvert læringsområde, jf. Figur 4.1 ovenfor.

Her er et eksempel på *overall expectations* for læringsområdet *Number sense and numeration*.

Overall expectations **By the end of Grade 1, students will:**
• Læse, betegne, sammenligne og ordne hele tal op til 50, og bruge konkrete materialer til at undersøge brøker og pengebeløb. • Demonstrere en forståelse af størrelsesorden ved at tælle op til 100 og ned fra 20. • Løse problemer, der kræver addition eller subtraktion af encifrede hele tal, ved brug af forskellige strategier.

Specific expectations (specifikke forventninger)
Specific expectations er det andet af de to typer af læringsmål i Ontarios curriculum. De specifikke forventninger er læringsmål, der afspejler progressionen i den viden og de færdigheder, som eleverne forventes at tilegne sig fra klassetrin til klassetrin. Disse læringsmål er opstillet for hver af de underkategorier, de enkelte læringsområder er inddelt i. Der kan være helt op til ni specific expectations for hver underkategori.

Den konkrete færdighed eller viden, der ønskes opnået, beskrives med ord og konkretiseres samtidig med eksempler på øvelser eller eksempler på spørgsmål, læreren kan stille, med henblik på at understøtte denne læring.

Specific expectations – Mathematical – category Operational sense **By the end of Grade 1, students will:**
• Løse forskellige problemer ved hjælp af addition og subtraktion af hele tal op til 20 ved brug af konkrete materialer og tegninger (fx billeder eller tallinjer). (Eksempel på problem; Miguel har 12 kager, syv kager er chokoladekager. Ved at tælle skal eleven finde ud af, hvor mange kager der ikke er chokoladekager). • Løse problemer ved hjælp af addition og subtraktion af encifrede hele tal ved at bruge forskellige mentale strategier (fx en mere end, en mindre end, tælle op, tælle ned, fordoble). • Addere og subtrahere pengebeløb op til 10¢ ved brug af legepenge og tegninger.

Specific expectations – Language – category Reflecting on oral communication skills and strategies. By the end of Grade 1, students will:
• Metakognition Med vejledning kan den studerende begynde at identificere de strategier, de tidligere har fundet nyttige, under og efter at have lyttet og talt. Læreren spørger: "Hvordan ved du, hvad du skal lytte efter"? "Hvad kunne du gøre, efter du har lyttet, for at tjekke, om du forstod, hvad du hørte?" "Hvad kan du gøre, hvis du ikke forstod det, du hørte"? "Hvad tænker du på, før du begynder at tale?" "Når du taler, hvordan kan du så identificere, om dit publikum forstår det, du siger?" • Forbundne færdigheder Den studerende kan begynde at identificere, hvorledes deres færdigheder som tilskuer, repræsentanter, læsere og skribenter hjælper dem med at forbedre deres mundtlige kommunikationsfærdigheder. Læreren spørger: "Hvordan kan du lære nye ord, som du kan bruge, når du taler?" "Hvilke ord har du lært fra de bøger, du læser, som hjælper dig med at forstå, hvad du hører, eller som du kan bruge, mens du taler?"

Process expectations (procesforventninger)
I den seneste ændring af curriculum for matematik blev der fokuseret på de processer, der fremmer elevernes læring i matematik. Der blev derfor identificeret syv matematiske processer, der skal tilgodeses i undervisningen; problemløsning, ræsonnement og bevis, refleksion, valg af værktøjer og beregningsmæssige strategier, forbindelse, at repræsentere og kommunikere. For hvert klassetrin er der udarbejdet mål for disse matematiske arbejdsprocesser, som eleverne skal opnå.

Achievement chart (kortlægning af præstationer)
Hvert fags curriculum indeholder et achievement chart. Det er en standardguide for hele Ontarioprovinsen, der skal bruges af alle lærere som ramme for vurdering og evaluering af den enkelte elevs præstation.

Målet er bl.a. at stille en fælles ramme til rådighed, der indeholder alle krav (expectations) i alle fag på tværs af klassetrin, at understøtte udviklingen af vurderingsopgaver og værktøjer af høj kvalitet samt at opstille kategorier og kriterier til brug for vurdering og evaluering af elevernes læring.

Vurdering og evaluering af elevernes læring tager i hvert fag udgangspunkt i de samme fire kerneelementer af læring; viden/forståelse, tænkning, kommunikation samt anvendelse.

For hvert fag er der udarbejdet en beskrivelse af de fire kerneelementet samt fire niveauer, der beskriver en progression i elevens læring inden for denne beskrivelse. Det er efterfølgende lærerens opgave at vurdere, hvilket niveau af læring eleven har opnået.

En illustration af, hvordan elementet *kommunikation* i relation til faget matematik er konkretiseret i achievement chart, ses i Tabel 4.4.

Tabel 4.4:

Kategorier	Niveau 1	Niveau 2	Niveau 3	Niveau 4
Kommunikation At udtrykke og organisere ideer og matematisk tænkning (herunder klarhed i det udtrykte, logisk organisation) ved hjælp af mundtlige, visuelle og skriftlige udtryksformer (bl.a. billeder, grafik, dynamik, numerisk, algebraiske former; konkrete materialer)	Udtrykke og organisere matematisk tænkning med begrænset effektivitet	Udtrykke og organisere matematisk tænkning med nogen effektivitet	Udtrykke og organisere matematisk tænkning med betydelig effektivitet	Udtrykke og organisere matematisk tænkning med høj effektivitet

Achievement charts uddybes nedenfor under afsnittet om evalueringspraksis.

Tværfaglighed
Der er ikke kun krav om, at der arbejdes på tværs af områder inden for det enkelte fag. Hvert curriculum indeholder et afsnit om, hvordan man arbejder tværfagligt. Det forventes, at eleverne får mulighed for at undersøge emner/temaer fra flere forskellige vinkler ved at inddrage elementer fra flere fag på en gang.

Andre tekster
Som et supplement til ovenstående elementer i curriculum finder man desuden:

- Beskrivelse af de principper, der ligger bag det enkelte curriculum
- Guidelines for undervisningens planlægning.

4.4 Fokusområder (hovedvægt på it-baseret undervisning)

It i undervisningen
I hvert fags curriculum er der et afsnit om informations- og kommunikationsteknologis (ICT) rolle i relation til det enkelte fag.

Det fremgår af curriculumteksten, at ICT kan udvide og berige lærerens undervisningsstrategier og understøtte elevernes sproglige kompetencer markant. Eleverne kan også bruge ICT til databearbejdning og rapportskrivning samt til at skabe kontakt til elever på andre skoler eller i andre lande.

E-baseret læring i Ontario
Det canadiske undervisningsministerium har designet den provinsielle e-læringsstrategi med henblik på at assistere skolebestyrelserne med at tilbyde digitale læringsmuligheder for de studerende.

Gennem e-Læring Ontario tilbyder ministeriet skolebestyrelserne adgang til en bred vifte af software og ressourcer, der indgår i den provinsielle Learning Management System (LMS) og The Ontario Educational Resource Bank (OERB). LMS tilbyder online-kurser for klassetrinnene 9. til 12., fundamentelle ressourcepakker. Ydermere tilbyder OERB tusindvis af digitale ressourcer til at støtte undervisning på alle niveauer – fra børnehaven til 12. klasse. Skolebestyrelser kan også bruge den provinsbaserede LMS og OERB til at støtte *blended learning*-tilgange i deres skoler.[1].

Skolebestyrelser, der deltager i e-Learning Ontario-strategien, har selv det fulde ansvar for levering af kurser og ressourcer på det lokale niveau. De bestemmer graden af adgang, de giver til deres lærere og de studerende, og de er ansvarlige for udstedelse af bruger login samt passwords. For at være berettiget til adgang til e-Learning Ontario-strategi skal de studerende være registreret i en skole, finansieret af provinsen.

På distriktsniveau har nogle skolebestyrelser, som for eksempel The Toronto District School Board, udviklet specifikke standarder for inddragelse af ICT i undervisningen. Det er en guide, der skal hjælpe lærere med at integrere ICT i det generelle curriculum og i deres egen praksis samt understøtte elevernes ICT-færdigheder med henblik på at forstærke deres løbende læring.

4.5 Evalueringspraksis

Evalueringen i Ontarios skoler fokuserer på elevens præstation i forhold til overall expectations. Læreren evaluerer på baggrund af elevens præstation i forhold til de læringsmål, der er defineret i specific expectations. Det er op til læreren at beslutte, hvilke specific expectations der skal bruges til dette formål. De, der ikke bliver brugt i den sammenhæng, vurderes løbende i den daglige undervisning via lærerens observation, noter eller lignende.

Både content standards (specific expectations), der her er nævnt, og de tidligere nævnte performance standards (achievement chart) indgår i lærerens samlede evaluering. Læreren er forpligtet til at bruge achievement chart i sin vurdering og evaluering af elevens læring. Som tidligere nævnt udgør niveau 3 normen for elevernes læringsniveau i Ontario. Niveau 1 afspejler en præstation, der ligger meget under normen, men den afspejler stadigvæk en karakter, der er bestået. Niveau 2 afspejler et niveau, der nærmer sig normen, og niveau 4 afspejler et niveau, der ligger over normen. Det skal her bemærkes, at de elever, der vurderes at være på niveau 4, ikke har nået læringsmål, der ligger uden for fagets ramme. Det er udtryk for, at eleven har nået alle eller næste alle læringsmål i faget, og at han eller hun har demonstreret evner til at bruge den konkrete viden og de konkrete færdigheder på mere sofistikerede måder end elever på niveau 3.

I Ontario har lærere frihed til at vælge evalueringsmetoder, samtidig med at de understøttes af guidelines, udarbejdet på provinsniveau.

Et af redskaberne er brugen af *report cards*, der bruges af lærere i elementary og secondary schools. Her redegør læreren for, hvor godt eleverne udvikler indlæringsfærdigheder og arbejdsvaner. Alle elever i secondary school modtager et *report card*, hvor elevens kurser, karakterer for hvert kursus, arbejdsvaner mv. beskrives.

Standardiserede provinsbaserede prøver
The Education Quality og Accountability Office (EQAO) blev etableret af Ontarios regering i 1996 for at evaluere kvaliteten og effektiviteten af grundskolen og sekundærtrinnet.

EQAO er ansvarlig for:

- udvikling og administration af undersøgelser for at vurdere Ontarios studerendes resultater
- rapportering af testresultater til ministeren og offentligheden
- give anbefalinger til forbedring af testresultater.

[1] http://www.edu.gov.on.ca/eng/document/policy/os/ONSchools.pdf

Gennemførelse af læseplaner er delvist styret gennem store EQAO skala-vurderingsprøver i engelsk og matematik for de studerende på følgende klassetrin: 3., 6. og 9. Testresultaterne fra provinsens testprogram offentliggøres kategoriseret efter skole. Et af formålene med testen er at vurdere, hvor godt eleverne lærer pensum at kende og at identificere et evt. behov for forandring.

Provinsprøverne måler læsefærdigheder, skrivefærdigheder og matematiske færdigheder på baggrund af Ontarios curriculum. Ontarios provinsbaserede prøver vurderer kumulative viden og færdigheder på fire centrale klassetrin:

- 3. klasse: Læsefærdigheder og matematik testes ved afslutningen af grundskolen (*primary division*).
- 6. klasse: Læsefærdigheder og matematik testes ved afslutningen af juniordivisionen (*junior division*).
- 9. klasse: Matematik testes første år af grundskolens sekundærtrin (*secondary school*).
- 10. klasse: Læsefærdigheder testes og er et gradueringskrav.

Hver bestyrelse træffer individuelle beslutninger om, hvordan der skal arbejdes videre på baggrund af testresultaterne. I distrikter, hvor eleverne får lave prøveresultater, tilbydes der mere støtte (heriblandt også økonomisk) fra provinsniveau.

Eleverne behøver ikke at bestå testen for at gå videre til det næste klassetrin.

5. DET SKOTSKE SKOLESYSTEM

Det følgende beskriver det skotske skolesystem.

5.1 Styringsmodel

I Skotland er skolesystemet både et nationalt og et lokalt anliggende. På nationalt niveau varetages uddannelsesområdet af det skotske uddannelsesministerium (*Education Department*), den skotske regerings uddannelsesdirektorat (*The Scottish Government Education Directorates*) samt Education Scotland[11]. I Skotland er curriculum besluttet af staten, men alle øvrige beslutninger relateret til uddannelser er uddelegeret til de lokale myndigheder og de enkelte skoler.

I Skotland definerer curriculum ikke, hvilke bøger, tekster etc. der skal bruges i undervisningen. I stedet definerer den læringsstadierne, de færdigheder, eleverne skal opnå, og fag, eleverne undervises i etc. Materialet er beregnet til at støtte lærerne i deres planlægning af undervisningen ved at foreslå opgaver, de kan give til eleverne, og identificering af aspekter ved forskellige emner, eleverne kan have svært ved at forstå etc.

Det har samtidig til formål at gøre det klart for eleverne, hvad der forventes af dem. Curriculum kombineres med individuelle arbejdsplaner, som hjælper underviserne til at blive bekendte med hver elevs behov og evner. Indholdet i undervisningen – hvilke bøger etc. der skal bruges – besluttes af de lokale myndigheder og skolerne, der dog skal tage højde for de nationale retningslinjer.

5.1.1 Nationalt ansvar vs. lokalt ansvar

I Skotland er der samlet set ingen national lovgivning vedrørende antallet af undervisningstimer. Der er heller ikke lovgivet om, hvor mange timer eleverne skal modtage undervisning i de enkelte fag (med udtagelse af idræt hvor det er lovpligtigt at modtage to timers undervisning ugentligt). Det overordnede ansvar for uddannelse varetages af de lokale myndigheder og de enkelte skoler. De lokale myndigheder fører kontrol med samtlige lokale skoler, og skolerne er ligeledes underlagt inspektion af HM Inspectorate of Education, en kontrollerende enhed skabt med henblik på at sikre kvalitet.

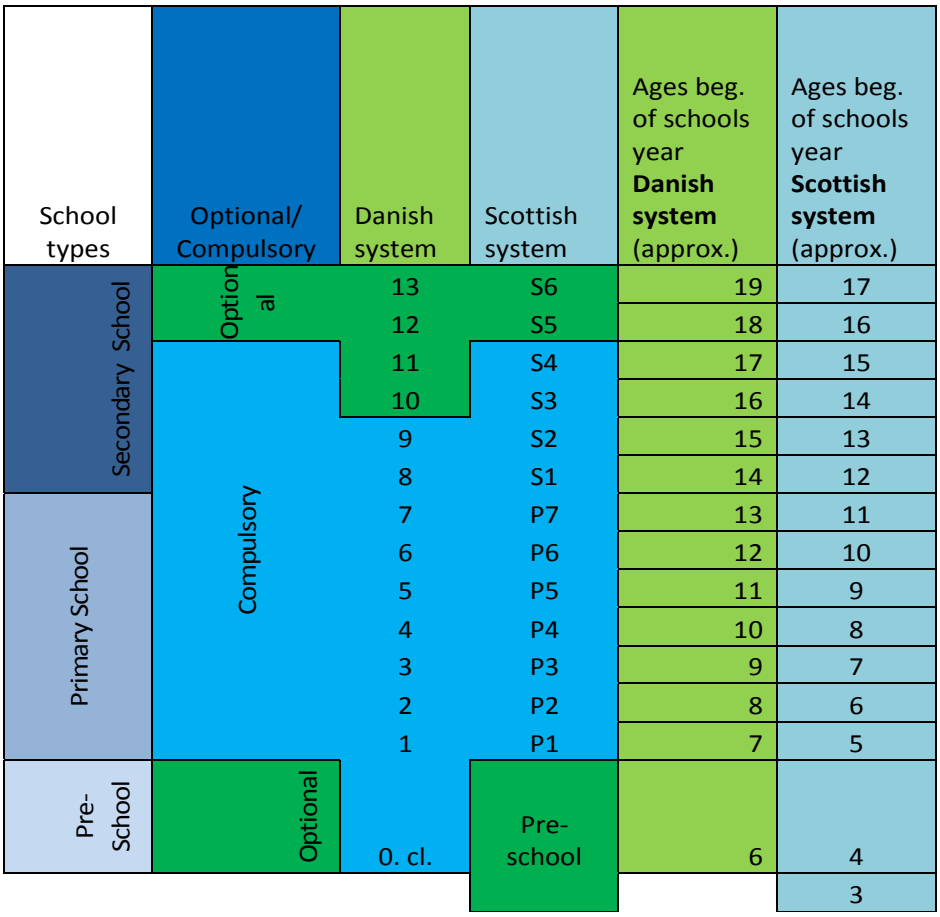
Implementeringen af den skotske inkluderingsstrategi, start- og sluttidspunkt for skoledagen, frokostordning etc. fastlægges lokalt af de enkelte skoler og den lokale skoles bestyrelse.

5.1.2 Model over skolesystemet i Skotland

Nedenstående model illustrerer det skotske skolesystem. I Skotland er der 11 års obligatorisk skolegang.

[11] Education Scotland er det statslige organ som løbende udvikler curriculum.

Figur 5.1: Overblik over det skotske skolesystem



Det skotske skolesystem består af følgende tre elementer:

- Nursery; 1 eller 2 frivillige år der er gratis
- Primary school; 7 års skolegang – også kaldet P1-P7
- Secondary school; de første 4 år – også kaldet S1-S4 – er obligatoriske, hvorimod de sidste 2 år – S5 og S6 – er universitetsforberedende.

Primary school og secondary school er inddelt i to separate institutioner. Det er et lovkrav, at studerende skal være minimum 16 år for at fuldføre det obligatoriske skoleforløb.

5.1.3 Fagrække og minimumstal

Som nævnt ovenfor er der ingen lovgivning, der bestemmer antallet af timer, de studerende skal undervises i. Dog er det mest almindeligt, at eleverne i primary school har 25 klokketimers undervisning pr. uge. Eleverne i secondary school har som oftest 27 klokketimers undervisning om ugen.

Nedenstående tabel opridser den skotske fagrække.

Tabel 5.1: Fagrække

Curriculum områder	Fag
Praktiske/kreative fag	Dans Musik Drama Kunst og design Håndværk og design
Sundhed og velværd	Idræt Husholdningsøkonomi Filosofi Personlig udvikling
Sprog 1) Klassiske sprog 2) Gælisk (begyndere) 3) Læsefærdigheder og engelsk 4) Læsefærdigheder og gælisk 5) Moderne sprog	1) Klassiske sprog 2) Gælisk (begyndere) 3) Engelsk 4) Gaidhlig (gælisk) 5) - Kinesiske sprog - Fransk - Tysk - Italiensk - Spansk
Matematik	Matematik
Religiøs og moralsk uddannelse	Religiøse, moralske og filosofiske studier
Naturvidenskab	Fysik Biologi Kemi
Samfundsfag	Økonomi Sociologi Geografi Ferie og turisme Geologi
Teknologistudier	It Teknologi
Tværgående læringsområder	
Sundhed og velbefindende, tværfagligt	
Tværfaglig læsekyndighed	
Tværfaglig talforståelse	

5.2 Curriculum – mål og indhold

Den skotske uddannelsespolitik og det skotske skolesystems målsætninger besluttes på det nationale niveau og er en integreret del af *Curriculum for Excellence 3-18* (CfE). Før CfE havde det skotske skolesystem et curriculum ved navnet *5-14 National Guidelines.* CfE indeholder bl.a.:

- målsætninger og retningslinjer vedrørende uddannelse (formålet med CfE er beskrevet i fire overordnede evner/kapaciteter hos eleverne: *successful learners, confident individuals, responsible citizens and effective contributors)*
- nationale læringsmål for skolesystemet (Experiences and Outcomes)
- læringsmålene for hvert fag (National Qualifications)
- Retningslinjer for uddannelse (Principles and Practice).

CfE fastlægger undervisningens fokusområder, målsætninger, uddannelsens inklusionspolitik, det faglige niveau (kompetencemålsætninger), eleverne skal kunne beherske, og holdninger til sundhed etc. Det skotske curriculum er baseret på kompetencemålsætninger. De interviewede eksperter fremhæver, at vægtningen af kompetencebaserede målsætninger skyldes et opgør med det tidligere *5-14 National Guidelines*-curriculum, der i høj grad var indholdsbaseret og derfor blev anset for at være for detaljeret og foreskrivende.

Ambitionen med de kompetencebaserede målsætninger er at fastsætte målene for undervisningens frem for midlerne – og dermed øge lærernes mulighed for at tilrettelægge undervisningen, så den er i overensstemmelse med lokale forhold og den enkelte elevs/klasses behov.

5.2.1 Målhierarki

Det skotske målhierarki består af følgende elementer:

- Overordnede målsætning (four capacities)
- Experiences and Outcomes
- National Qualifications
- Principles and Practices.

I Skotland er der otte overordnede curriculumfagområder:

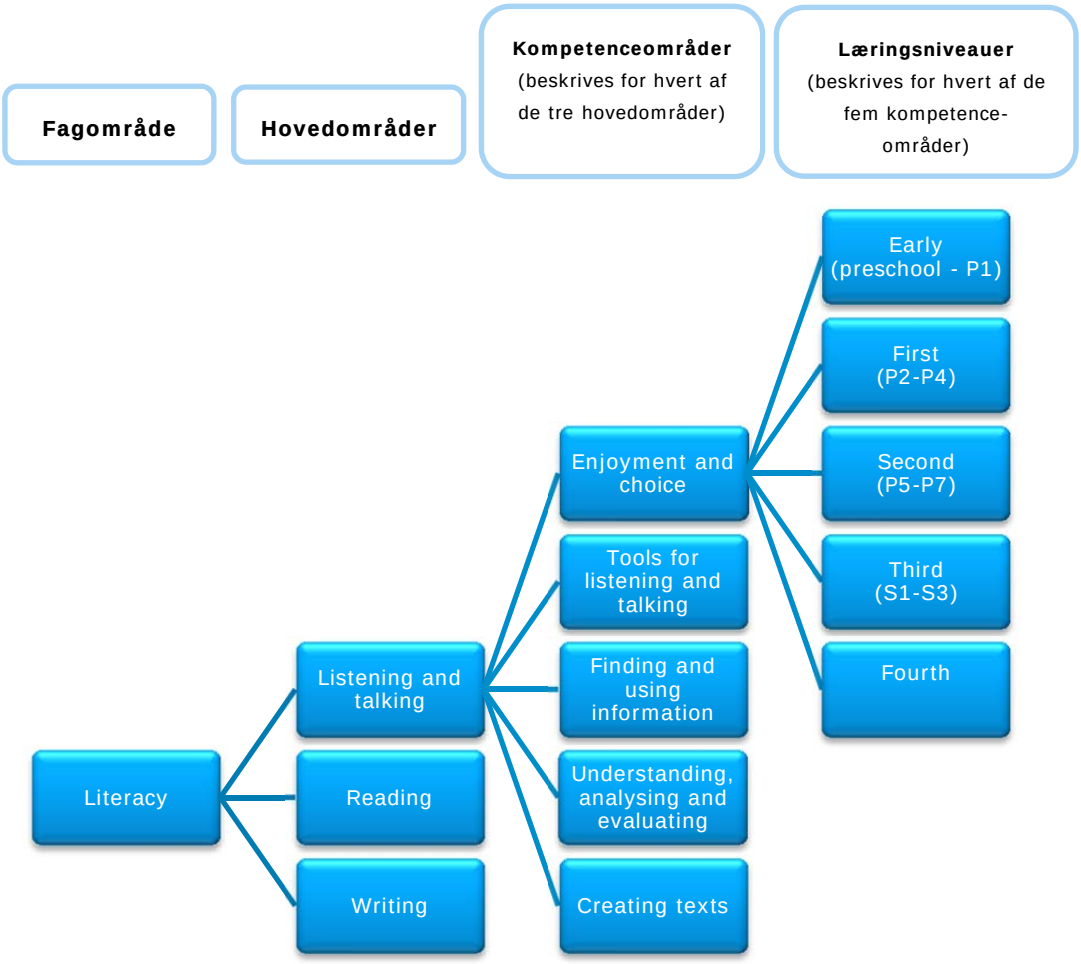
- Praktiske/kreative fag
- Sundhed og velvære
- Sprog
- Matematik
- Religiøs og moralsk uddannelse
- Naturvidenskab
- Samfundsfag
- Teknologistudier.

De nationale, kompetencebaserede læringsmål er udmøntet som udviklingslinjer, der beskriver en progression i læring. Progressionen er beskrevet på såkaldte curriculumniveauer/læringsniveauer, der er knyttet til bestemte klassetrin, som det fremgår her:

Elevernes faglige udvikling beskrives på fem læringsniveauer
Tidlig (daginstitutioner-P1)
Første (P1-P4)
Andet (P4-P7)
Tredje og fjerde (S1-S3)
Senior (S4-S6)

Opbygningen af *Experiences and Outcomes* er illustreret nedenfor med udgangspunkt i fagområdet *Literacy*. Fagområdet er delt op i tre hovedområder, der i dette tilfælde hver især er delt op i fem ens kompetenceområder. Hvert af de fem kompetenceområder er udmøntet i læringsmål på de ovenfor nævnte fem læringsniveauer.

Figur 5.2: Strukturen i Ontarios læringsmål



Nogenlunde samme systematik, som vist i ovenstående figur, gør sig gældende for de syv andre curriculumfagområder. For matematik gælder det, at fagets tre hovedområder er: *tal, penge og måleenheder; former, position og bevægelse* samt *håndtering af information*. Modsat *Literacy* så er kompetenceområderne ikke ens. Hvert hovedområde har sine egne kompetencemål. Hovedområdet Tal, penge og måleenheder har følgende kompetenceområder:

- Estimering og afrunding
- Tal og talprocesser
- Multiplikation, elementer og primtal
- Potens og rod
- Brøk, decimalbrøker og procent
- Penge
- Tid
- Måling
- Matematiks indflydelse på verden i fortiden, nutiden og fremtiden
- Mønstre og sammenhænge
- Udtryk og ligninger.

Antallet af kompetenceområder i matematik er meget varierende. Former, position og bevægelse har som eksempel kun to:

- 2D-former og 3D-objekter
- Vinkler, symmetri og transformationer.

Nedenfor er oplistet to eksempler på konkrete kompetencebaserede læringsmål for henholdsvis modersmål og matematik.

Figur 5.3: Eksempel på kompetencebaseret læringsmål i engelske og gæliske læsefærdigheder

Eksempel
Læringstrin: Andet
Curriculumområde: Engelske og gæliske læsefærdigheder
Hovedområde: Læse
Kompetenceområde: Værktøjer til at lytte og tale
Eksempel på læringsmål: ***"Jeg kan vælge imellem og benytte en række strategier og ressourcer, før jeg læser og imens jeg læser for at sikre forståelse. Ligeledes kan jeg begrunde mine valg."***

Figur 5.4: Eksempel på kompetencebaseret læringsmål i matematik

Eksempel
Læringstrin: Tredje og fjerde
Curriculumområde: Matematik
Hovedområde: Tal, penge og måleenheder
Kompetenceområde: Penge
Læringsmål: "Jeg kan henvise til oplysninger om indtjening og fradrag og bruge det, når jeg foretager beregninger for at bestemme nettoindkomsten"[12]

Foruden de otte overordnede curriculumfagområder er talforståelse og læsefærdighed i modersmålet tværfaglige fokusområder. En af eksperterne forklarer fordelene ved dette tværfaglige fokus: *"Talforståelse og læsefærdighed integreret i alle dele af curriculum – i modsætning til silotænkning. Dette er en fordel, da læse- og talforståelse kan integreres i andre fag, som eleverne finder interessante"*. Sundhed og velvære er ligeledes et tværfagligt fokusområde.

5.2.2 Fokusområder

It i undervisningen er et fokusområde i Skotland. Et af de overordnede læringsmål, der er beskrevet i *Experiences and Outcomes for Technology*, er, at it skal *"udvide min [elevernes] opmærksomhed på, hvordan ideer i matematik og videnskab er anvendt i ingeniørvidenskab og teknologi".*

Ifølge en af de interviewede eksperter er it et integreret værktøj på de skotske skoler. De skotske skoler har bl.a. verdens første nationale skoleintranet, kaldet Glow. Glow gør det muligt for elever og lærere at skabe en personlig brugerprofil. Gennem denne brugerprofil kan elever og lærere oprette interessegrupper, dele dokumenter, sende beskeder/mails, have videokorrespondance, deltage i virtuel læring etc. Glow gør det også muligt for forældre at oprette en brugerkonto og dermed anvende mange af de tjenester, som Glow udbyder, ligesom de også kan få en overordnet forståelse af, hvad skolen og CfE tilbyder og forlanger af deres børn. Glow blev udviklet som en integreret del af CfE, og korrespondancen imellem de to er derfor en integreret del af Glow. Et udvalg af digitale læremidler er tilgængelige gennem Glow. CfE fremhæver brugen af teknologiske ressourcer i undervisningen, herunder spilbaseret læring (fx computerspil). The Consularium er blevet etableret for at støtte lærerne i at fremme spilbaseret læring og undervisning.

Et andet fokusområde er forældreinvolvering. Formålet er at forbedre forældrenes involvering i deres børns uddannelse og i skolens anliggender generelt. I maj 2006 vedtog det skotske parlament en lov om forældreinvolvering, som bl.a. fokuserer på følgende områder:

- *Læring i hjemmet:* Læring i hjemmet spiller en vigtig rolle for barnets læring. Forældre bør modtage information og støtte til at hjælpe deres børn med at udvikle deres læring derhjemme.

[12] Der er tale om flere læringsmål for matematik, ovennævnte er blot et eksempel på ét af dem.

- *Samarbejde mellem hjem og skole*: Samarbejde kan hjælpe til at identificere potentielle problemer og muligheder på et tidligt stadie. Skoler bør overveje måder, de kan levere information, som kan hjælpe forældre til at involvere sig i skolen.
- *Forældrerepræsentation:* Forældre skal have mulighed for at udtrykke deres syn på deres børns uddannelse.

5.3 Evalueringspraksis

I Skotland benyttes nationale evalueringer og inspektioner som værktøj til at undersøge, hvorvidt lærerne implementerer det skotske curriculum og monitorerer de skotske studerendes akademiske niveau.

I Skotland benyttes bl.a. PISA og SSLN (Scottish Survey of Literacy and Numeracy) til at evaluere de skotske elevers akademiske progression. SSLN er en national stikprøvebaseret undersøgelse, som monitorerer de skotske elevers præstationer i læse- og regnefærdigheder i skiftevis P4, P7 og S2. Den første survey med fokus på regnefærdigheder blev udført i maj 2011 og den første læsefærdighedssurvey i maj 2012. SSLN indeholder ligeledes en spørgeskemaundersøgelse for studerende og lærere med fokus på, hvad der påvirker læring samt de studerendes holdning til klasseundervisningen og erfaring med klasseundervisningen. Lærerne bliver ydermere bedt om at besvare spørgsmål relateret til, hvorledes de implementerer Experiences and Outcomes-delen af CfE i undervisningen. Størstedelen af de skotske skoler er med i denne spørgeskemaunderspøgelse, som udføres årligt. Udvælgelse af respondenter er randomiseret og varetages af The Scottish Government's Education Analytical Services.[13]

Undersøgelsen skal bidrage til at belyse, hvordan det samlede niveau i det skotske skolesystem er, og ikke hvorledes den enkelte skole eller det enkelte distrikt klarer sig. Deltagelse i disse undersøgelser er lovpligtig.

Derudover skal skoler deltage i selvevalueringsarbejdet kaldet *How Good is Our School*[14]. Denne evaluering fokuserer mere bredt end SSLN. Her er fokus på følgende seks områder, som skolen skal selvevaluere:

- Hvilke resultater har vi opnået?
- Hvor godt lever vi op til vores lokalsamfunds behov?
- Hvor god er den undervisning, vi tilbyder?
- Hvor god er vores organisatoriske model?
- Hvor god er vores ledelse?
- Hvordan er vores muligheder for at forbedre os?

I 2001 blev der vedtaget en overenskomst om lærernes arbejdsforhold, og CfE udsprang af det treformarbejde, der lå bag den nye overenskomst for lærernes arbejdsforhold. Et større ansvar for skolerne blev uddelegeret til de lokale myndigheder og de individuelle skoler. Som resultat bliver den overordnede evaluering af det skotske skolesystem varetaget på nationalt niveau, mens det er op til lokale myndigheder at beslutte, om og i givet fald hvilke yderligere evalueringsmæssige tiltag der skal finde sted i de enkelte distrikter. De lokale myndigheder har mulighed for at foranstalte yderligere test eller undersøgelser på skoler i deres distrikt (council). Ifølge en ekspert varierer det en del, hvorvidt de lokale myndigheder benytter sig af denne mulighed, og beslutningen herom træffes ofte som del af en politisk vision. Det er ekspertens oplevelse, at de lokale myndigheder indimellem nærmest udarbejder deres eget sideløbende curriculum inkl. evalueringspraksis, og at dette kan være uhensigtsmæssigt, selv om intentionerne ofte er at støtte lærerne.

[13] http://www.educationscotland.gov.uk/learningteachingandassessment/assessment/ssln/aboutssln/aboutssln.asp
[14] http://www.educationscotland.gov.uk/Images/HowgoodisourschoolJtEpart3_tcm4-684258.pdf

6. TVÆRGÅENDE ANALYSE

I dette afsnit analyserer vi på tværs af de fire lande.

6.1 Rids over landenes styringslogik og skolesystemer

I dette afsnit præsenterer vi kort de fire lande ud fra tre vinkler. For det første opridser vi hovedtræk ved skolesystemet, hvorefter vi beskriver vi den overordnede styring af skolevæsenet. Endelig præsenterer vi nogle af de skolepolitiske dagsordener, der bliver brugt som referencepunkt i den resterende del af rapporten.

6.1.1 Skolesystem

Sammenligner man de fire landes skolesystemer, så er der tydelige fællestræk mellem det tyske og det østrigske skolesystem. I begge lande påbegyndes skolegangen, når eleven er 6 år, og der er 9 års obligatorisk skolegang. Ligeledes vælger eleverne retning i relation til videre uddannelse allerede på 5. klassetrin i både Østrig og Tyskland.

I Skotland påbegynder eleverne deres skolegang, når de er 4½ år, og de har 11 års obligatorisk skolegang. Eleverne vælger først en specialisering/retning meget sent i deres skoleforløb på 11. klassetrin, da det brede curriculum og almen viden prioriteres.

Eleverne er 6 år, når de begynder skole i Ontario. Der er 12 års obligatorisk skolegang, og fra 9. klasse vælger eleverne retning. Her kan de vælge mellem tre forskellige kursustyper inden for de grundlæggende fag (academic, applied og open courses). Fra 11. klassetrin kan de vælge mellem fem forskellige kursustyper.

6.1.2 Styringssystem

Ser man på tværs af de fire lande, er styringslogikken generelt kendetegnet ved en central styring af skolevæsenet i relation til mål og indhold.

For alle lande gælder det, at målene for elevernes læring fastsættes på stats- eller delstats-/provinsniveau. Derimod tyder det på, at der er forholdsvis stor frihed for den enkelte lærer til at tilrettelægge undervisningen frem mod målene, altså en lille grad af didaktisk styring. Det skal dog her understreges, at der i Ontario har været stort fokus på at understøtte lærernes implementering af mål for undervisningen generelt i forbindelse med The Ontario Strategy[15], men ikke i form af det som vi i Danmark betegner som læseplan.

Hvor indholdet generelt fastsættes centralt, så er der forskelle landene imellem, når man ser på fagrække, antallet af timer pr. fag og undervisningsmidler. I Østrig er såvel fagrække som antal timer pr. fag fastlagt på statsligt niveau. Det samme gør sig gældende i Tyskland, dog på delstatsniveau. I Skotland og Ontario er fagrækken også bestemt centralt, men antallet af undervisningstimer besluttes lokalt. I Skotland er det op til den enkelte skole i samarbejde med kommunen at fastsætte timetallet for de enkelte fag. I Ontario er det i primary school ligeledes op til den enkelte skole at beslutte antallet af undervisningstimer for hvert fag pr. klassetrin. Der afsættes dog en samlet timepulje pr. fag på provinsniveau. For secondary school er der for de fleste kurser fastsat et timetal pr. kursus.

I relation til undervisningsmaterialer så godkendes disse af staten/på ministerieniveau i Østrig. I Ontario har man på provinsniveau et undervisningsministerium, der udarbejder lister over godkendte lærebøger og andre undervisningsmaterialer.

Nedenstående figur giver et samlet overblik over styringstilgangen og skolesystemer i henholdsvis Østrig, Tyskland, Ontario og Skotland.

[15] Se http://www.oecd.org/pisa/pisaproducts/46580959.pdf samt landerapport.

Tabel 6.1: Overblik over skolesystemerne i de fire lande

Dimensioner/Lande	Østrig	Tyskland	Ontario	Skotland
Styringstilgang	• Stærk statslig styring med ansvar for skolepolitik • Regionale råd har driftsansvar	• Svag statslig (føderal) styring, men dagsordensættende for området • Stærke delstater har ansvar for skolepolitik, men stadig udstrakt autonomi for lærerne	• Svag statslig styring • Provinserne har hovedansvar for styringen af skolesystemet, men ansvaret for udmøntning ligger først og fremmest hos den enkelte skolebestyrelse i de enkelte skoledistrikter	• Svag statslig styring • Ansvar for skolepolitikken varetages af lokale myndigheder samt de individuelle skoler • De individuelle skoler har det største ansvar • Der er statslig og lokal monitorering af skolerne
Skolesystem	• Skolegang fra det 6. år • 9 års obligatorisk skolegang • Elever vælger hurtigt specialisering	• Skolestart fra det 6. år • 9 års obligatorisk skolegang • Fra 5. skoleår kan der specialiseres i særlige skoletyper	• 12 års obligatorisk undervisning • Specialisering fra 9. klassetrin	• 11 års obligatorisk skolegang • Skolegang fra eleven er 4½ år • Elever skal være minimum 16 år ved udgangen af den obligatoriske skolegang • Eleverne vælger specialisering sent. Specialiseringen påbegyndes det sidste obligatoriske år

6.1.3 Væsentlige skolepolitiske dagsordener

Den skolepolitiske dagsorden i Østrig og Tyskland har været præget af debat om utilfredsstillende resultater i PISA- og TIMSS-undersøgelserne, der ikke har levet op til myndighedernes ambitionsniveau på vegne af deres respektive skolesystemer. I Østrig har dette medført et øget fokus på evalueringskultur. I Tyskland er kompetencebaseret læring et særligt indsatsområde både på føderalt og delstatsniveau. Ligeledes er der øget fokus på, at curricula i delstaterne skal leve op til statslige uddannelsesstandarder. Det er fortsat en udfordring at få alle parter til at bakke op om og implementere uddannelsesstandarderne i praksis.

Også i Ontario har der været fokus på utilfredsstillende faglige resultater, hvilket resulterede i *The Ontario Strategy* tilbage i 2003. Ud over et klart og tydeligt fokus på understøttelse af lærernes implementering af målene for undervisningen, så flyttede man dele af ansvaret for lærernes faglige udvikling og implementering af gældende curriculum fra distriktsniveau til provinsniveau. Resultatet af strategien har været en klar forbedring af de faglige resultater.

I Skotland er det i høj grad overdragelsen af styring fra staten til de lokale myndigheder, som er det dagsordensættende politiske emne, da det er et forholdsvis nyt tiltag, der ændrede magtbalancen i skolesystemet. Hvor det gamle curriculum var meget udførligt i relation til undervisningens indhold, så er det nuværende meget overordnet. Derfor er langt det meste af planlægningsarbejdet lagt ud til de lokale myndigheder og den enkelte skole. Det vil sig, at de selv skal bestemme, hvilke undervisningsmaterialer de vil bruge, hvilke slags opgaver eleverne skal have mv., altså selve planlægningen af undervisningen, og det er nyt.

6.2 Curricula i nærbillede

Rambøll har i en tidligere rapport fra 2010[16] sammenlignet tilgange og indhold af curricula i de nordiske skolesystemer. I rapporten peges på forskelle og ligheder mellem landene. Rapporten har bl.a. fokus på det såkaldte *core curriculum*, dvs. nationale/statslige tilgange til mål- og rammesætning af undervisning og læring i skolerne.

I det følgende har vi tilsvarende fokus på de statslige (eller delstatslige) tilgange til curriculum. I den forbindelse er det underforstået, at der naturligt vil eksistere lokale, dvs. kommunale og/eller

[16] Kortlægning af fagrækker og curriculum i de nordiske skolesystemer, Rambøll for Skolens Rejsehold, 2010.

skolebaserede måder at arbejde med curriculum på. I flere af landerapporterne påpeges det i den forbindelse, at lærerne arbejder med stor autonomi (fx i Tyskland og Skotland), hvorfor der indlysende vil være lokalt forankrede tilgange til curriculum. Denne lokale dimension er ikke omfattet af nærværende kortlægning.

Med reference til forskellene i styringstilgang i skolesystemerne (se tidligere) kan det konstateres, at disse forskelle tilsvarende er afspejlet i de udvalgte landes arbejde med curriculum. Konceptet i Østrig er funderet i en langvarig tradition tilbage i 1986 og afspejler, at der er en stærk statslig styring af skolerne. Således er curriculum formuleret på statsligt niveau og er bindende for alle skoler. Tilgangen har mange fællestræk med læreplansparadigmet i Norge og til en vis grad den danske model med Fælles Mål (om end det i Danmark er muligt at formulere lokale mål og læseplaner, selv om det sjældent er tilfældet).

I Tyskland er modellen tilnærmelsesvis den samme, hvis man ligestiller de tyske delstater (Länder) med Danmark og Østrig som stater. I delstaterne udarbejdes curricula som en bindende ramme for undervisningen i skolerne, men den ekstra dimension i Tyskland er de *føderale uddannelsesstandarder*, der i vid udstrækning synes at have været retningsgivende for det paradigmeskift, der er set i Tyskland i de senere år. Hermed menes den vigtighed, som curricula tildeles som pejlemærker for undervisning i skolen og ikke mindst for elevernes læring. Selv om det føderale niveau i Tyskland således ikke umiddelbart har en formel myndighedsrolle på skoleområdet, så er delstaterne blevet enige om, at det med udarbejdelsen af uddannelsesstandarder (*Bildungsstandards*) har været nødvendigt at sætte en dagsorden for samlet set at styrke faglighedeni de tyske skoler.

For så vidt angår Canada, har nærværende kortlægning set nærmere på provinsen Ontario. Det bemærkes i den sammenhæng, at skoleområdet udelukkende er reguleret af den enkelte provins. Her er der tilsvarende udviklet statsbaserede, bindende curricula, der sammenlignet med flere af de øvrige lande er meget ambitiøse og omfattende (se yderligere nedenfor).

Modellen i Skotland er opbygget på tilsvarende vis, hvor de overordnede retningslinjer og mål fastsættes på statsligt niveau. På regionalt niveau fastsættes den lokale skolepolitik, hvor fx antallet af undervisningstimer for hvert fag eller lokale ambitioner for undervisningsresultater fastsættes. Det skal fremhæves, at skolerne kan have en relativt stor grad af autonomi til at fastlægge egen politik på disse områder.

Sammenfattende er der således mange fællesnævnere mellem de undersøgte lande. Alle lande har formuleret og fastsat nationale/delstats-/provinsbaserede curricula, som er bindende for det samlede skolevæsen. En yderligere dimension i Tyskland er de dagsordensættende (og ganske omfattende) uddannelsesstandarder formuleret på føderalt niveau.

I næste afsnit ser vi nærmere på den mere konceptuelle tilgang til at arbejde med mål og curricula, herunder karakteren af målene.

I forhold til *strukturen for curricula* (med andre ord *hierarkiet* af mål) har vi i nedenstående tabel skitseret, hvordan curricula er struktureret i de fire undersøgte lande. Danmark (Fælles Mål-paradigmet) er medtaget som referencepunkt.

Tabel 6.2: Struktur for curricula

Land	Danmark	Tyskland (Hessen som eksempel)	Østrig	Ontario	Skotland
Benævnelse	Fælles Mål	Bildungsstandards (føderalt) Lehrplan-/kern-curriculum (del-statsniveau)	Lehrplan der Volksschule	The Ontario Curriculum	Curriculum for excellence
Hoved-/kom-petence-områder	Centrale kundskabs- og færdigheds-områder	Kompetenzbereiche des Faches	Bildungs- und Lehraufgabe	Curriculum area	Experiences and Outco-mes
Endelige mål	Slutmål	Bildungsstandards	N.A.	Principles un-derlying cur-riculum + cur-riculum in to-tal	National Qualifica-tions
Løbende mål	Trinmål	Bildungsstandards	Bildungs- und Lehraufgabe	Overall ex-pectations + Specific ex-pectation	N.A.
Retningslinjer for undervis-ningens ind-hold	Vejledende læseplan	Leitfaden	Allgemeine didak-tische Grundsätze	N.A.	Principles and practice
Vejlednings-materiale	Undervis-ningsvejled-ning	Leitfaden	N.A.	N.A.	Support material
Andet		Überfachliche Kom-petenzen	Allgemeines Bil-dungsziel (almene mål) Bildungs- und Lehraufgaben, Lehrstoff und di-daktische Grund-sätze der verbind-lichen Übungen der Vorschulstufe (retningslinjer for førskole)	Achievement charts	

Tabellen ovenfor er et forsøg på at skabe et tilnærmet sammenligningsgrundlag, hvorfor illustrationen er udtryk for en forsimpling af virkeligheden. Alligevel er det vurderingen, at oversigten bidrager til en række pointer om forskelle og ligheder vedrørende curricula[17].

En første pointe synes at være, at man tilnærmelsesvis kan tale om en ensartet struktur for opbygningen af curricula i de undersøgte lande, om end der er betydelige forskelle (hvilket vi vender tilbage til).

Det giver mening i de fleste lande at referere til et *målhierarki* med overordnede målsætninger/formålsbeskrivelser til at starte med, hvor nogle (for)mål er direkte relateret til fagene (som fx i Danmark), hvorimod andre har mere tværgående eller overordnet karakter (som fx i Østrig og i delstaten Hessen i Tyskland). Herefter følger i flere lande yderligere konkretiseringer af mål – typisk for fag og på udvalgte klassetrin.

[17] Rambøll ønsker at tage forbehold for, om alle detaljer om de enkelte landes curricula er gengivet korrekt, bl.a. som del af oversættelser fra originalsprog til dansk.

Som en del af dette hierarki hører det tilsvarende med, at størstedelen af landene opererer med *hoved- eller kompetenceområder*, der i Danmark traditionelt har været betegnet som centrale kundskabs- og færdighedsområder, altså sammenhængende faglige områder, der udgør fagets kerne og grundstruktur. Det er entydigt, at disse hovedområder bidrager til at strukturere curricula i stort set alle de undersøgte lande. Det er endvidere værd at bemærke, at de faglige hovedområder i en vis udstrækning er defineret på ensartet vis i fagene modersmål og matematik.

Det eksempel i kortlægningen, der i forhold til strukturen kommer tættest på den danske model, forekommer at være fra Tyskland, hvor vi har brugt delstaten Hessens *Kerncurriculum* som eksempel. Her findes curriculum for det enkelte fag fra grundskole (til 4. klasse) over øvrige skoletyper og til gymnasium. Dette kernecurriculum har mange fællesnævnere i sin grundstruktur som Fælles Mål, om end dokumenter om henholdsvis mål og vejledning er udgivet separat.

På trods af den ensartede struktur for opbygningen af curricula på tværs af lande, er der som nævnt betydelige forskelle.

Selv om de fleste lande har udarbejdet curriculum pr. fag forstået som faghæfter, så er der undtagelser og variationer. Fx er den østrigske læreplan en bredere og mere rummelig gennemgang af overordnede mål og didaktiske principper, og læreplanen synes ikke at være udtryk for et sammenhængende og hierarkisk målsystem. Fagene er således indlejret i den generelle læreplan for *Der Volksschule* (frem til 4. klasse), og der er altså ikke en læreplan pr. fag forstået som et faghæfte pr. fag. Heller ikke i Skotland er der faghæfter pr. fag, men hæfter pr. *fagområde* (8 i alt). I Ontario og Tyskland (udvalgte delstater) er der derimod faghæfter, som vi kender dem i Danmark, om end disse i Tyskland er udgivet pr. skoletype.

En anden væsentlig forskel er, at ikke alle lande opererer med egentlige undervisningsvejledninger til lærerne. Rambøll har således ikke identificeret nationale vejledninger i Østrig og Ontario, hvor dette givetvis er udlagt til lokale myndigheder, skoler og lærere.

Derudover er der forskel mellem landene på, hvorvidt der er formuleret mål for hvert klassetrin. Det meget ambitiøse curriculum i Ontario opererer med mål på hvert klassetrin – både såkaldte *Overall expectations* og *Specific expectations.* Førstnævnte beskriver den viden og de færdigheder, eleverne skal opnå (demonstrate) ved kursets afslutning. Sidstnævnte er en uddybning og konkretisering af de overordnede mål. I Tyskland og Østrig er (trin)mål – som i Danmark – defineret for udvalgte klassetrin/grupper af klassetrin.

Endelig er der forskel på, om der arbejdes med tværgående temaer i curriculum. Dette er ikke eksplicit tilfældet i Danmark, hvorimod andre lande lægger mere eller mindre vægt på tværfaglige eller overordnede temaer. I Tyskland/Hessen tildeles en række tværfaglige (überfachliche) kompetencer en vigtig rolle, da disse skal binde alle fag sammen i curriculum. I Østrig beskrives tilsvarende nogle almene uddannelsesmål, der helt indledningsvist rammesætter læreplanen. Også i Skotland indleder man curriculum med en række temaer, bl.a. *Health and wellbeing across learning*.

Sammenfattende viser kortlægningen, at struktureringen af curricula i de undersøgte lande har flere fællesnævnere, men også væsentlige forskelle. Opbygningen følger på tværs af landene, i store træk, den samme struktur, hvor brugen af hoved- og kompetenceområder for fag synes at være et omdrejningspunkt. Brugen af centrale kundskabs- og færdighedsområder, som det kendes fra Danmark, udgør typisk kernen i den struktur, som curriculum for de enkelte fag er bygget op om. En væsentlig forskel er variationen i forhold til, hvad der er omfattet af curriculum. Østrig har en del generelle og tværgående overvejelser og bestemmelser med i curriculum (samt timetal) og først til sidst i curriculum formuleres mål for fag. I Tyskland er det derimod selve målene, der er i fokus. I Ontario har man valgt en meget detaljeret og finmasket model, hvor forskellige konkretiseringer af mål er koblet til vurderinger af performance. Endelig er der variation i forhold til – så vidt Rambøll har kunnet vurdere det – i hvor høj grad vejledninger og vejledningsmaterialer indgår som en del af curriculum.

6.3 Fra undervisning til elevens læring – tilgange til kompetencemål

I dette afsnit ser vi på tværs af de fire landes tilgange til læringsmål i bredeste forstand. Vi har særligt fokus på, om og hvordan landene har introduceret kompetencemål – altså lidt forenklet sagt om målene retter sig mod, hvad eleverne skal kunne, frem for mål der beskriver, hvad eleverne skal undervises i. Tabellen herunder sammenligner de fire lande på både overordnet og konkret niveau.

Mod et kompetencebaseret paradigme?

I samtlige fire lande har man i løbet af 2000-årene set kritisk på de respektive uddannelsessystemer. I Ontario stod man over for et skolesystem under pres, hvor elever flyttede til private skoler, og hvor lærerne sagde deres job op. Svaret var en grundlæggende skolereform. I Tyskland talte man – på basis af dårlige resultater i PISA-undersøgelserne – om et *"PISA-Schock".* En betegnelse der kan genfindes i Østrig med nogle års forsinkelse.

Tabel 6.3: Overblik over mål i de fire lande

Dimensioner/Lande	Østrig	Tyskland	Ontario	Skotland
Eksplicit skifte i retning af kompetencebaserede mål?	Ja, affødt af kritiske scorer i PISA-undersøgelser	Ja, affødt at kritiske scorer i PISA-undersøgelser	Ja, led i grundlæggende strategisk skolereform	Ja, opgør med tidligere indholdsstyret curriculum
Anvendes en kompetencebaseret retorik?	Ja	Ja, delvist og forsøgsvist	Ja	Ja
Målparadigme – fokus på undervisning eller kompetencer?	Overordnet retorik fokuserer på både kompetencer og kvalitet i undervisning	Overordnet retorik fokuserer på både kompetencer og kvalitet i undervisning	Overordnet retorik fokuserer primært på kompetencer	Overordnet retorik fokuserer primært på kompetencer
Findes reelt kompetencebaserede mål, der definerer, hvad eleven skal kunne på et givent tidspunkt?	Ja	Ja	Ja	Ja
Sammenhæng mellem kompetencemål og curriculum	Indirekte – bindende uddannelsesstandarder supplerer curriculum	Indirekte – bindende uddannelsesstandarder supplerer curriculum	Integreret del af curriculum	Integreret del af curriculum

Et af de tiltag, som går på tværs af de fire lande, er et generelt skift fra fokus på undervisningen, dvs. fra fokus på undervisningens indhold til de kompetencer, som eleverne skal tilegne sig – hvilke færdigheder eleverne forventes af have. Dette afspejler sig i den retorik, som de fire lande bruger, når de præsenterer deres svar på de uddannelsespolitiske udfordringer.

I beskrivelserne af curricula (faghæfter mv.), rationalerne bag etc. på de respektive landes hjemmesider er det tydeligt, at der anvendes en kompetencebaseret retorik. I Ontario har fokus på elevresultater og præstationer været et gennemgående tema siden *The Ontario Strategy.* Det kommer blandt andet til udtryk i læringsmålene, hvor et delelement er *performance standards* og *achievement charts.* Det samme kan ses i Skotland, hvor *Curriculum for Excellence* definerer, at et outcome repræsenterer, hvad der skal opnås. I de tysktalende lande er sprogbruget lidt anderledes, men også her finder man klare eksempler på en kompetencebaseret retorik – både i de føderale uddannelsesstandarder og i lokale curricula på delstatsniveau. I Tyskland vil man empirisk afdække, om eleverne når de fastlagte standarder, og tilsvarende vil man i Østrig bruge de nationale test til at afdække, om eleverne har opnået bestemte kompetencer.

Det store fokus på udbyttet af undervisningen er tydeligt, hvilket ses af brugen af ord som performance, resultater, outcome, kompetencer mv. På et paradigmatisk plan tyder ovenstående på, at de fire lande alle har taget et grundlæggende skifte fra fokus på undervisningens indhold til resultaterne af undervisningen. Fokus på kompetencer og resultater af undervisningen balanceres dog i særligt de to tysktalende lande med en fremhævelse af kvaliteten i undervisningen. Eksempelvis finder man i forbindelse med de tyske kompetencebaserede uddannelsesstandarder en overskrift, der hedder *Qualitätssicherung in Schulen.* I Østrig indleder man på det østrigske un-

dervisningsministeriums hjemmeside beskrivelsen af uddannelsestandarderne med: "*Jedes Kind in Österreich hat das Recht auf höchste Qualität im Unterricht.*"

Det er også muligt at finde reminiscenser af fokus på kvalitet i undervisningen i Skotland. Eksempelvis fremhæves på det skotske undervisningsministeriums hjemmeside: "*The quality and the nature of the learning experience*"[18]. Senere på samme side skriver man dog eksplicit, at curricula er mindre detaljerede og mindre præskriptive end tidligere udgaver. Dermed demonstreres også her et klart skifte i retning af det resultatbaserede paradigme. Ontario virker til at have den meste konsekvente resultatbaserede retorik. I præsentationen af *Elementary schools* på undervisningsministeriets hjemmeside fremhæves det, at elevernes potentiale skal realiseres, at læse- og matematikfærdigheder er afgørende for succes i samtlige fag, ligesom målsætningerne i forhold til elevernes præstationer understreges.

Findes reelt kompetencebaserede mål i alle landene?
En ting er den generelle sprogbrug, der rammer curriculum ind. Noget andet er, om landene også på det konkrete plan formår at omsætte retorikken til læringsmål, der reelt er kompetencebaserede, dvs. retter sig mod hvad eleverne skal kunne. Vi har gravet et spadestik dybere og har inden for modersmålet udvalgt eksempler på kompetencemål på 4. klassetrin for at sammenligne typerne af mål. Vi har udvalgt eksempler, der er repræsentative for typerne af mål i forhold til kompetenceområdet læsning. Det skal dog understreges, at vi ikke har udvalgt eksempler, der indholdsmæssigt er sammenlignelige (fx at sammenligne mål for læsestrategier).

Tabel 6.4: Eksempler på kompetencemål på 4. klassetrin – modersmål

Dimensioner/land	Østrig	Tyskland	Ontario[19]	Skotland[20]
Kompetencemål for læsning	Eleverne kan selvstændigt vælge bøger og tekster ud fra egen interesse Eleverne kan adskille forskellige teksttyper ud fra væsentlige kendetegn	Kende forskellige former for fag- og skønlitteratur Udvikle levende forestillinger ved at læse og høre litterære tekster	Eleverne kan analysere tekst og forklare, hvordan specifikke tekstelementer bidrager til at skabe mening Eleverne kan demonstrere forståelse af en vifte af tekster ved at sammenfatte vigtige ideer og citere understøttende detaljer	Jeg vælger og læser regelmæssigt, lytter til eller ser på tekster af interesse, og jeg kan udtrykke, hvor godt de imødekommer mine behov, og jeg kan begrunde mit personlige valg Jeg kan udarbejde noter og organisere dem for at udvikle min måde at tænke på, bevare og genkalde mig information, udforske emner samt udfærdige nye tekster ved brug af mine egne ord på en hensigtsmæssig måde
Antal emner i hvert mål	1-2	1	3	6
Antal mål for læsning i alt	Ca. 20[21]	Mere end 30	Ca. 20[22]	Mere end 30
Observerbarhed	Delvist	Delvist	Delvist	Delvist

[18] http://www.educationscotland.gov.uk/thecurriculum/howisthecurriculumorganised/experiencesandoutcomes/index.asp
[19] Ontario arbejder dog også med performancemål, der er endnu mere konkrete.
[20] Skotlands system med mål i fem faser gør, at der ikke er mål for 4. klassetrin. Nogle elever vil have nået målet inden 4. klassetrin, andre efter 4. klassetrin.
[21] Baseret på de mål, der er operationaliseret i yderste led.
[22] Ikke inkluderet de overordnede forventninger.

Tabellen viser flere interessante ting. For det første ses det, at samtlige lande rent faktisk har formuleret konkrete kompetencebaserede mål.

For det andet fremgår det, at målsætningerne varierer i kompleksitet. I de tysktalende lande er målene forholdsvis kortfattede, ligesom man her tilstræber, at hvert mål kun favner en enkelt indholdsmæssig komponent. Fx at eleverne kan adskille forskellige teksttyper ud fra teksternes hovedkendetegn. Derimod er målene i Ontario og Skotland noget mere komplicerede. Teksten til hvert mål er længere. I et af målene er den første del af sætningen – *at tage noter og organisere dem* – klar og forståelig, og elevens mestring kan identificeres. Det bliver straks vanskeligere i sætningens anden del, hvor evnen til at tage noter sættes i sammenhæng med evnen til at udvikle tænkning. Det virker også som om, at der i den sidste del af sætningen tilføjes en ny dimension til kompetencen. Evnen til at skabe nye tekster virker som en ny kompetence, som føjes til.

Kompleksiteten kan dog ikke kun betragtes ud de enkelte mål. De indgår som en del af et målkompleks i forhold til det enkelte kompetenceområde; her læsning. Her viser det sig, at landene reelt har mere end 20 mål for læsning på 4. klassetrin. Den enkelte elevs kompetencer skal således vurderes ud fra et omfattende og mangefacetteret målunivers.

For det tredje er der forskel på typen af mål. Her findes der grundlæggede tre typer. I Tyskland formuleres målene som udsagnsord: *kende, udvikle og demonstrere*. Der er naturligvis ikke nogen tvivl om, at det er eleven, der skal kende til forskellige former for faglitteratur, men Østrig og Ontario tydeliggør dette ved at være eksplicit om, at det er eleverne, der skal vælge bøger ud fra deres egen interesse. Skotland vælger et endnu mere tydeligt kommunikativt signal, idet man eksplicit har formuleret et subjekt: *Jeg vælger og lytter….*

For det fjerde er det tydeligt, at landene har formuleret mål, der er så konkrete, at de rent faktisk kan observeres i form af elevadfærd. Der er dog nogle former for adfærd, der er lettere at observere end andre. Det kan forholdsvis nemt vurderes, om eleverne kan adskille eventyr fra digte, mens det er svært at afklare, om noter organiseres for at udvikle den enkelte elevs tænkning. Det er således vanskeligt at vurdere, hvornår eleven har gjort det godt nok. Det er ikke tydeligt i forhold til *væsentlige kendetegn* som i det østrigske mål eller *hensigtsmæssig måde* i det skotske mål. Tilsvarende kan der argumenteres for, at det reelt er vanskeligt at vurdere, om eleven reelt har valgt en tekst ud fra interesse. Der er her behov for mere konkrete indikatorer.

Målsystemerne i detaljer
I dette afsnit ser vi nærmere på, hvordan de fire lande har struktureret kompetencemålene. Vi beskriver den grundlæggende logik og sammenligner de fire lande. I den skotske model tager man afsæt i det enkelte fag som fx engelsk. Dette inddeles i hovedområder, som videre opdeles i fem kompetenceområder der hver har tilknyttet kompetencebaserede mål:

1. Lytte og tale – læringselement: fornøjelse og valg samt redskaber
2. Læse – læringselement: finde og anvende information og forstå, analysere og evaluere
3. Skrive – læringselement: skabe tekster.

Herefter tænkes i måling af elevens progression i form af kompetencebaserede mål. Konkret følges elevens udvikling gennem fem faser op igennem skoleforløbet.

Også Ontario har et klart progressionsperspektiv i de kompetencebaserede læringsmål. De enkelte fag opbygges i læringsområder, der afspejler fagets grundlæggende viden og færdigheder. Eksempelvis opdeles faget matematik i fem læringsområder, som igen opdeles i underkategorier. Disse underkategorier operationaliseres i konkrete læringsmål. Opbygningen af Ontarios læringsmål er således i vid udstrækning lig Skotlands. Den specifikke opdeling af læringsmålene adskiller sig dog derved, at Ontario opdeler i både overordnede forventninger til hvert læringsområde samt specifikke forventninger/mål, der er konkretiseret og eksemplificeret. Derudover er der mål på hvert klassetrin i Ontario, hvilket ikke er tilfældet i Skotland.

Tilgangen i Østrig adskiller sig, hvilket kan hænge sammen med de kompetencebaserede måls forhistorie. For det første er målsætningerne – i uddannelsesstandarderne – ikke en del af curriculum, men udviklet i en selvstændig proces inspireret af curriculum. For det andet "måles" der på 4. og 8. klassetrin, hvilket hænger sammen med den østrigske skolemodel (hvor disse klassetrin repræsenterer naturlige overgange). For det tredje er der ikke standarder/mål for samtlige fag. På 4. klassetrin er der fx udelukkende standarder for tysk og matematik.

Den grundlæggende logik i opbygningen af mål er, at der inden for hvert fag defineres et generelt kompetenceområde. Eksempelvis opdeles faget tysk i 4. klasse i fem generelle kompetenceområder (eksempelvis læse og håndtere tekst og medier), som konkretiseres i delområder (stabilisere og fordybe læseinteresse og motivation), inden de konkrete målbare operationaliseringer beskrives (vælge bøger og tekst i forskellige medier efter egen interesse). Tilgangen har ikke på samme måde som i Ontario og Skotland et klart progressionssigte. Eksempelvis er der for faget tysk fire generelle kompetenceområder på 8. klassetrin, mens der som nævnt var fem på 4. klassetrin. Tilsvarende er der betydelig forskel på tilgangen til mål i faget matematik, hvor kompetencetænkningen for 8. klasse er langt mere kompliceret.

Tyskland arbejder også med uddannelsesstandarder. Her er der det særlige opmærksomhedspunkt, at standarderne er nationale, mens ansvaret for skolesystemet og dermed også udarbejdelse af curriculum er placeret på delstatsniveau. Uddannelsestandarderne er derfor udtryk for en ramme, som delstaterne har forpligtet sig til at anvende. Standarderne gælder for 4., 9., 10. og 12./13. klassetrin i den tyske skolemodel. I 4. og 9. klasse omfatter standarderne udelukkende tysk og matematik, mens flere fag inkluderes på senere klassetrin.

Også her opdeles de enkelte fag i generelle kompetenceområder, der som i Østrig brydes ned i specifikke kompetenceområder i to trin. Først konkretiseres de overordnede kompetenceområder som i den østrigske model. Herefter operationaliseres de specifikke kompetenceområder i konkrete målbare enheder. Grundlæggende anvendes her de samme overordnede kompetenceområder i tysk og matematik på 4. og 9. klassetrin (dog tilføjes et sjette kompetenceområder på 9. trin).

Ser man på tværs af ovenstående, tegner der sig et billede af to overordnede tilgange til kompetencebaserede mål. I Ontario og Skotland er målene tæt integreret i curriculum. Idet curriculum og mål er udarbejdet som hinandens forudsætninger, er det muligt at følge den enkelte elevs progression over tid. Dette gøres med meget detaljerede og konkrete kompetencemål. Heroverfor står uddannelsestandarderne, der er udviklet med udgangspunkt i curriculum, men kun udgør et supplement. Her findes ikke den samme progressionstænkning, jf. at man i Østrig kun måler to gange i løbet af elevens skoletid. Ser man på kompetencemålene, er de mere overordnede og mindre målbare. Begge modeller giver mulighed for at vurdere elevernes resultater på et givent tidspunkt, men den integrerede model følger elevernes udvikling tættest.

Indikative erfaringer – konsekvenser i klasseværelset og for elevernes læring
Vi har i forbindelse med udarbejdelsen af landerapporter talt med en række eksperter i de fire lande. Herunder fremhæver vi nogle af de erfaringer, som er kommet frem i disse interview. Det skal understreges, at disse erfaringer udelukkende hviler på eksperternes udsagn og derfor udelukkende er indikative.

I Ontario fremhæves det, at de meget klare kompetencemål i matematik er gode til at støtte lærerne. På samme måde fremhæves det, at fokus på målet med undervisningen frem for undervisningens indhold giver lærerne en hensigtsmæssig fleksibilitet i tilrettelæggelsen af undervisningen, herunder tilpasning til specifikke elevbehov. På den anden side fremhæves nogle udfordringer. Lærernes praksis kan have meget stor variation. Og den udbredte anvendelse af test kan have stor betydning for lærernes fokus. I Skotland ses det også som en fordel, at frihedsgraderne i *Curriculum for Excellence* giver store muligheder for at tilpasse undervisningen elevernes interesser. Til gengæld er meningerne blandt lærerne delte. Nogle sætter pris på både frihedsgrader og de evalueringsredskaber, der bidrager til at give et billede af elevens niveau, mens andre ikke mener, at det er klart, hvordan man i praksis skal bruge evalueringsredskaberne, herunder

hvordan man bruger evalueringsresultaterne fremadrettet i tilrettelæggelsen af undervisningen med henblik på at understøtte elevernes læring.

I Østrig fremhæves det, at systematikken og konkretiseringen af målene giver en klarhed for lærerne. Til gengæld er det uhensigtsmæssigt, at lærerne både skal orientere sig i det vanlige curriculum og i uddannelsesstandarderne, mens det i Tyskland betones, at man trods nationale standarder og en bevægelse i retning af kompetencebaserede mål fortsat ser store variationer på tværs af skoler.

Ser man uden for de fire lande, fremhæves det i Norge i forbindelse med evalueringen af *Kunnskapsløftet*, at reformens fokus på tydelige mål for eleverne har haft betydning for lærernes prioriteringer – i dag er lærerne i højere grad opmærksomme på, hvad eleverne skal lære frem for aktiviteterne i undervisningen. Samtidig rettes dog en kritik af systematikken i og samspillet mellem forståelsen af grundlæggende færdigheder og kompetencemål. Dette resulterer i en meget varieret lærerpraksis. En kritik som man aktuelt forsøger at tage højde for gennem en revision af læreplanerne.

På et helt overordnet niveau ser man den samme grundlæggende tendens i de fire lande. Alle forsøger at forme tænkningen fra indholdet af undervisningen som omdrejningspunkt til udbyttet af undervisningen. Det er dog vanskeligt at vurdere, om dette skifte for alvor sætter sig spor i klasseværelset – eller rettere i elevernes læring. Selv i de to lande, der er gået mest radikalt til værks – Ontario og Skotland – er der trods ambitiøse reformer fortsat implementeringsudfordringer og tvetydige erfaringer.

6.4 Evalueringspraksis og dens kobling til curricula og læringsmål

I det følgende afsnit ser vi nærmere på de fire landes evalueringspraksis med særligt fokus på, hvordan evalueringspraksis knyttes til både curricula og læringsmål.

Tabel 6.5: Oversigt over evalueringspraksis

Dimensioner/Lande	Østrig	Tyskland	Ontario	Skotland
Betydning af evalueringspraksis	Højt på uddannelsespolitisk agenda[23]	Højt på uddannelsespolitisk agenda	Højt på uddannelsespolitisk agenda	Højt på uddannelsespolitisk agenda
Evalueringstilgang	Deltagelse i internationale undersøgelser Nationale test i 4. og 8. klasse	Deltager i internationale undersøgelser Nationale test i 3. og 8. kl. (6. kl. frivilligt) Initiativer på delstatsniveau Evalueringstilgange meget lokalt forankrede	Samlet strategisk evaluerings- og monitoreringsramme favner internationale undersøgelser, test, selvevalueringer mv.[24]	Samlet strategisk evaluerings- og monitoreringsramme favner internationale undersøgelser, test, selvevalueringer mv.[25]
Tilknytning til curriculum	Medium – test udviklet i tilknytning til uddannelsestandarder der bygger på curriculum	Lav – curriculum udvikles på delstatsniveau	Høj – test udvikles i tæt tilknytning til curriculum	Høj – evaluerings- og monitoreringsramme direkte knyttet til curriculum

[23] Vurdering foretaget af Rambøll på baggrund af interview og research i landene. Indplaceringen er behæftet med usikkerhed.

[24] http://www.edu.gov.on.ca/eng/policyfunding/growsuccess.pdf

[25] http://www.educationscotland.gov.uk/Images/BtC5Framework_tcm4-653230.pdf

Dimensioner/Lande	Østrig	Tyskland	Ontario	Skotland
Kobling til lærernes praksis	Tilstrækbt gennem feedback fra test til skoler Effekt uklar – statsligt fokus og understøttelse, men fortsat autonom lærerpraksis	Tilstrækbt gennem feedback fra test til skoler Effekt uklar, men flere delstater understøtter udvikling af selvevalueringsværktøjer Fortsat høj lærerautonomi	Tæt – evaluering sker med udgangspunkt i læringsmål tæt på den enkelte elev Effekt tvetydig – fortsat stor variation i evalueringspraksis og risiko for "teaching to the test"	Tilstrækbt – tegn på nytteværdi for lærerne, men fortsat udfordringer med vejledning til lærerne

Det første der springer i øjnene er, at samtlige lande har evalueringspraksis højt på agendaen. I de tysktalende lande har både arbejdet med kompetencebaserede læringsmål, uddannelsesstandarder og de uddannelsespolitiske drøftelser om evalueringstilgang taget afsæt i de internationale undersøgelser af skoleelevers resultater – i særdeleshed PISA-undersøgelsen, jf. ovennævnte "PISA-Schock". I Ontario har evaluering og brug af data haft en tydelig funktion, da to af de tre overordnede mål, der styrer skolereformen, fokuserer på elevpræstationer.

Samtlige lande har inkluderet de internationale undersøgelser, PISA og TIMSS, i deres evalueringstilgang. Tilsvarende har samtlige lande test, som for Skotlands, Østrigs, Tysklands og Ontarios vedkommende er udviklet i sammenhæng med curricula og uddannelsesstandarder. Skotland har udviklet en samlet strategi for brug af evaluering og monitorering i sammenhæng med curriculum. Det kommer til udtryk i strategien *Framework for Assessment for Curriculum for Excellence.* Det mere end 60 sider lange dokument definerer rollerne for de respektive aktører som elever, lærere, forældre, ledere, myndigheder og øvrige interessenter. Samme ambitiøse strategiske tilgang ser man i Ontario med *Growing Success – Assessment, evaluation and reporting in Ontario schools.*

Evaluerings- og monitoreringstilgangene har som oftest et dobbelt formål. Data skal på den ene side bruges på både elev- og lærerniveau til at vurdere, om læringsmålene på elevniveau nås. På den anden side skal data på policy-niveau anvendes i vurderingen af, om de overordnede uddannelsespolitiske målsætninger realiseres. I Tyskland skal de nationale test (VERA) fx både bruges til at informere politikudviklingen, hvis der er delstater, som scorer lavt, og data skal bruges til at give skoler, klasser, lærere og elever overblik over elevernes læring og udvikling.

Ser vi nærmere på brugen af test i de fire lande varierer praksis. Ontario er det land, som mest eksplicit knytter kompetencebaserede læringsmål og evaluering sammen. Her skal lærerne vurdere elevernes resultater i de såkaldte *achievement charts.* De øvrige lande deler ambitionen om at understøtte elevernes læring gennem evaluering af elevernes præstationer, men har ikke på samme måde konkret opfølgning på elevpræstationer.

Det er meget vanskeligt at vurdere, om et stort politisk fokus på evaluering og en tæt kobling mellem curriculum, læringsmål og test samt ønsket om at bruge resultaterne tæt på den enkelte elevs læring og udvikling rent faktisk lykkes. En meget forsigtig vurdering er, at det ikke sker af sig selv. Trods udviklingen af standarder og nationale test i Østrig er evalueringspraksis fortsat meget varieret og lokalt forankret. Det samme er tilfældet i Tyskland. På trods af Skotlands ambitiøse evaluerings- og monitoreringsstrategi fremhæver de interviewede eksperter også her, at lærerne er usikre på, hvordan de skal vurdere curriculum og læringsmål i den daglige undervisningspraksis. Den mest lovende udvikling ser umiddelbart ud til at være i Ontario, hvor eksempelvis de klare læringsmål i matematik fremhæves som nyttige i lærernes forberedelse, undervisning og evaluering. Også her er der fortsat udfordringer, fx i forhold til en uhensigtsmæssig "teaching to the test".

6.5 Et særligt blik på inddragelse af it i undervisningen

Der er stor forskel på, i hvor høj grad man har fokus på inddragelse af it i undervisningen/digital læring i henholdsvis Ontario, Tyskland, Skotland og Østrig. Nedenstående tabeller illustrerer denne forskel samt afdækker, hvilken tilgang landene har til digital læring, om der findes konkrete kompetencebaserede læringsmål og i så fald hvilke. Endvidere sættes der fokus på, hvorvidt landene har hensigtserklæringer for inddragelse af it i undervisningen.

Tabel 6.6: Overblik over inddragelse af it i undervisningen i de fire lande

	Ontario	Skotland	Tyskland	Østrig
Fokus på inddragelse af it i undervisningen	Begrænset	Stort	Begrænset	Begrænset
Tilgang til digital læring	Integreret i fagene	Integreret samt selvstændig	Ikke integreret	Integreret i fagene
Tilstedeværelse af kompetencebaserede læringsmål inden for it	Nej	Ja, i stort omfang	Nej	Ja, men få

I Skotland er der stor politisk fokus på inddragelse af it i undervisningen/digital læring. I Ontario, Østrig og Tyskland er der endnu begrænset fokus. I Tyskland nævnes it i begrænset omfang i curriculum. Det skyldes ikke mindst, at de blev udarbejdet, inden computeren blev en integreret del af de tyske skolers undervisningsmaterialer. I Ontario er digital læring integreret i undervisningen i begrænset omfang. Der er dog to tiltag, der skal fremhæves i denne sammenhæng.

Tabel 6.7: Ontario og Tyskland i nærbillede

	Ontario	Skotland
Tiltag	Provinsbaseret e-læringsstrategi udviklet af undervisningsministeriet i Ontario.	Etablering af verdens første nationale skole-intranet 'Glow'.
Formål	Den provinsbaserede e-læringsstrategi har til formål at assistere skolebestyrelserne med at tilbyde digitale læringsmuligheder for de studerende gennem etableringen af en online platform.	Glow blev udviklet som en integreret del af CfE for at ændre den måde, der arbejdes med curriculum i Skotland samt for at sikre, at alle landets elever, på trods af demografiske udfordringer, alle har lige adgang til en god uddannelse. Glow blev ligeledes etableret for at øge fokus på spilbaseret læring.
Brugergevinst	**Skolebestyrelserne** opnår adgang til en bred vifte af software og øvrige ressourcer	**Elever og lærere** kan oprette interessegrupper, dele dokumenter, sende beskeder/mails til hinanden, have videokorrespondance, deltage i virtuel læring etc.
	Eleverne får adgang til online kurser for klassetrinnene 9. til 12.	**Forældrene** kan også oprette en brugerprofil på Glow og herigennem opnå en overordnet forståelse af, hvad skolen og CfE tilbyder og forlanger af deres børn.
	Læreren får adgang til tusindvis af digitale ressourcer til at støtte undervisningen på alle niveauer.	

Etablering af Glow i Skotland er et eksempel på et initiativ, der har til formål at styrke inddragelsen af it i undervisningen samt understøtte elev- og forældreinvolvering. Ontarios e-læringsstrategi har først og fremmest fokus på at give elever og lærere adgang til digitale ressourcer og kurser.

Som det fremgår af ovenstående tabel, er digital læring integreret i den eksisterende undervisning i Ontario, Skotland og Østrig. I Tyskland indgår digital læring i meget begrænset omfang i curriculum. Den skotske tilgang skiller sig ud fra Ontarios og den østrigske, da digital læring både ses som et selvstændigt mål og integreres i alle øvrige fag i fagrækken.

6.6 Kompetencebaserede digitaliserede læringsmål

Nedenstående tabel giver indblik i de mål for digital læring, der fremgår af curriculum i Ontario, Skotland og Østrig.

Tabel 6.8: Digital læring i Ontario, Skotland og Østrig

	Ontario	Skotland	Østrig
Læringsmål med fokus på digitaliseret læring	At hjælpe studerende med at indsamle, organisere og sortere i de data de indsamler, og herefter skrive, referere samt præsentere deres fund	Udvide mine (elevernes) opmærksomhed på, hvordan ideer i matematik og videnskab er anvendt i ingeniørvidenskab og teknologi.	Eleverne skal blive kompetente it-brugere
		Ved at benytte den rigtige software kan jeg arbejde kollaborativt med henblik på at designe et interessant spil, som inkorporerer kontrol af teknologi eller interaktiv multimedia.	Eleverne skal blive i stand til at anvende elektroniske hjælpemidler
		Ved at lære de grundlæggende principper i et programmeringssprog eller teknologikontrol kan jeg designe en løsning på et scenario, gennemføre løsningen og evaluere dets succes	

Det fremgår af tabellen, at der i Skotland er tale om kompetencebaserede læringsmål af en meget specifik karakter, hvorimod læringsmålene i Ontario og Østrig er mere diffuse og ikke-kompetencebaserede.

6.7 Sammenfatning

Kortlægningen af curricula i de fire lande viser sig at have en grundlæggende fælles opbygning på tværs af lande, trods forskelle i skolesystemerne – hvor særligt de tysktalende skiller sig ud ved et tidligt valg af retning. Curriculum følger en struktur med hoved- og kompetenceområder for det enkelte fag. Der er dog også forskelle. Blandt andet i forhold til hvor direkte der fokuseres på mål, og hvor detaljeret og finmasket konkretiseringerne af målene er.

Når vi ser nærmere på målene, er det tydeligt, at alle fire lande bevæger sig i retning af et kompetencebaseret paradigme. Et skifte, der oftest er motiveret af utilfredsstillende fagligt niveau hos eleverne. Analysen viser, at der – trods forskelle landene imellem – er to overordnede tilgange til de kompetencebaserede mål. Også her skiller de to tysktalende lande sig ud. Curriculum og de kompetencebaserede uddannelsesstandarder er ikke direkte knyttet sammen, men målene er udledt af curriculum. De kompetencebaserede mål følger overgange i skolesystemet – i Østrig eksempelvis overgangen når de første fire fælles år er gennemført – og afspejler dermed ikke i samme grad progressionen i elevernes læring som i Skotland og Ontario.

Analysen viser også – ganske vist på et indikativt grundlag, at der selv i lande, som arbejder strategisk, målrettet og bevidst med kompetencebaserede mål, kan der være stor variation i, hvordan de opfattes af de lærere, som skal omsætte målene til læring for eleverne. Nogle lærere sætter pris på den klarhed og retning, som kompetencemålene giver. Andre kan på trods af vejledninger fortsat være usikre på, hvordan de skal fortolke læringsmålene, hvilket også ses af de norske erfaringer.

Større fokus på kompetencebaserede mål er altså ikke tilstrækkeligt i sig selv. Men erfaringerne fra sammenlignelige lande kan bidrage til at skabe et stærkt fundament i den danske proces.

BILAG 1
LANDERAPPORTER

1. AUSTRIA

The following country report gives a systematical description of the primary and secondary school system of Austria with a focus on the curricula for native language and mathematics. After a brief description of the overall Austrian school-system with separate general and academic secondary schools, the subject range and the regular hours for German and mathematics are examined. Further, the Austrian educational standards are described. The report also describes the learning objectives for these subjects and discusses content areas like parental involvement or IT-related goals.

The report is based on desk-research. Different kinds of document were considered – from the curricula themselves over legal regulations to scientific articles. Additionally Rambøll conducted three interviews with Austrian experts on curricula and educational standards. These experts are: Doris Latschen, researcher and lector at the Pädagogische Hochschule Kärnten. Edith Schneider, professor for didactics in mathematics at the University of Klagenfurt. Elfriede Witschel, researcher for didactics in German at the University of Klagenfurt. The experts gave valuable information on the curricula and educational standards and the current educational developments and debates in Austria.

Rambøll uses the report to synthesize across the countries studied to the client, Danish Ministry of Children and Education.

1.1 Characteristics of the education system and steering model

1.1.1 The steering model of the school system

In Austria, the Austrian State is responsible for the national education system. Existing school types, curricula as well as school experiments are standardized for all Federal States by the Austrian State. The Federal Ministry of Education, Arts and Culture (BMUKK) regulates the entire primary and secondary school systems, which include general and vocational education. The Federal Ministry for Economic Affairs and Labour (BMWA) is assigned with part-time vocational schooling and school based apprenticeships. The BMUKK decides upon school laws and regulations, school-structure, curricula and exams, the authorization of schoolbooks as well as the qualification of teachers.

Regional boards, so called *Landschulräte*, exist in every federal state and are subordinated to the BMUKK. These boards are in charge of the inspection and administration of schools, including the construction, maintenance and closing of schools except for compulsory schools. The administration of compulsory schools, that is to say primary schools, general secondary schools, new middle schools, pre-vocational schools as well as vocational schools, is assigned to the federal states themselves. Also the administration support of teachers is in the hands of the federal states. Besides the Austrian federal-states are in charge of nursery schools.

In 2000, PISA firstly claimed good results in Austrian schools. However, this claim had to be withdrawn due to mistakes in the data collection as well as the data sampling. Having revised the study, Austria achieved quite bad results in comparison to other European schools. This was due to its strongly diversified school system. The PISA results started an extensive discussion about the Austrian school system within the nation. To be able to support school experiments in a more unbureaucritical way, Austria abolished its former rule to require a two third majority of the parliament in order to pass new school laws.

Since 1994/1995, more freedom is given to Austrian schools as well. They are allowed to decide about certain parts of the curricula within the framework that is given by the BMUKK. On each school, a school board can decide upon particular items of the curricula. A two third majority of the school board is needed in order to introduce individual adaptions. In that way schools can focus on the students and parents needs and wishes. [1]

[1] Bundesministerium für Unterricht, Kunst und Kultur in Zusammenarbeit mit Bundesministerium für Wissenschaft und Forschung (2008): Bildungsentwicklung in Österreich: http://www.bmukk.gv.at/medienpool/17146/bildungsentwicklung_07.pdf

1.1.2 School-types

In contrast to many other European countries, like Germany, Austria holds a school system that is more complex than comprehensive school systems.

Core characteristics of the Austrian school system are:

1. Compulsory education starts with the age of six and lasts for nine years.
2. The school-system can be divided into primary and secondary education as well as into general and vocational education.
3. Various secondary school types exist, which all represent different educational paths as well as lead to different qualifications.

Primary Schooling is divided into four class levels that need to be visited by every student. Secondary schooling is structured more individually and is divided into two sections. Section I lasts for four years, starting with class level 5 and ending with class level 8 /class level 6 (children with special needs). At the moment, students can choose between several school types:

- General Secondary Schooling (*Hauptschule*)
- New Secondary Schooling (*Neue Mittelschule*)
- Lower Level of Academic Secondary Schooling (*Gymnasium, Realgymnasium, wirtschaftliches Realgymnasium*)
- Schooling for children with special needs (*Sonderschule; Inklusive Bildung*)[2]

General Secondary Schooling lasts four years and intends to generate general education to students. It is the so to say lowest form of secondary schooling in Austria. Classes are mostly divided into performance groups. The curriculum for the best performance group corresponds to the curriculum of the lower level of Academic Secondary Schools. It is intended that students can switch schools easily, if the feel the need to upraise their level of education.

New Secondary Schooling represents a former school experiment, which has become a regular secondary school in September 2012. “This school system is intended to replace General Secondary Schooling (Hauptschule). Apart from eliminating separation of children into different educational avenues too early on, a central feature of New Secondary Schooling is broad implementation of a new learning culture based on individualization and inner differentiation. This means that every child and his/her individual capabilities and talents can be challenged and nurtured. Children are given sufficient time and assistance to learn the material at their own speed, and they also have additional resources at their disposal to help develop their particular talents actively. Instruction at New Secondary Schools follows the curriculum for the lower level (5th to 8th grade) of Academic Secondary Schools and is designed by teachers from General Secondary Schools as well as Academic Secondary Schools working together in teams”.[3]

The lower level of Academic Secondary Schooling displays various school forms, which all aim at an intensive knowledge building, but vary in their educational focus (*Gymnasium, Realgymnasium, wirtschaftliches Realgymnasium*). Although the original concept for new secondary schools also intended to replace the first four years of Academic Secondary Schooling, the Gymnasium and its relatives will remain. Thus, in many regions the New Secondary Schools will be the lower track of secondary education and won’t attract students with higher aspirations. However, in rural regions without the lower level of Academic Secondary Schooling, New Secondary Schools have a good chance to be one school for all children.

Section II of secondary schooling also displays a variety of school types. Students are able to attend all forms of secondary schooling regardless of their schooling in Section I. However, certain forms of secondary school in Section II require certain qualifications, which are tested on the basis of performance records or entrance exams.

---

[2] Students with special needs attend inclusive schools from class level 1 to class level 6.

[3] Bundesministerium für Unterricht, Kunst und Kultur (2013): Compulsory Education: http://www.bmukk.gv.at/enfr/school/bw_en/bw_en_ps.xml

Again, students can choose from different school types:

- Polytechnic Schooling (*Polytechnische Schule*)
- Part-Time Vocational Schooling / School Based Apprenticeships (*Duale Ausbildung*)
- Technical and Vocational Schooling (*Berufsbildende Mittlere Schule*)
- Higher Vocational Schooling (*Berufsbildende Höhere Schule*)
- Upper Level of Academic Secondary Schooling (*Allgemeinbildende Höhere Schule*)
- Prevocational Year and Inclusive Vocational Training for students with special needs (*Berufsvorbereitungsjahr (BVJ); Integrative Berufsausbildung*)

"Polytechnic Schools can be attended after the eighth school grade and comprise only one grade. In the ninth, or a voluntary tenth school year, students are prepared for later life and especially for a career with more in-depth general education classes, career orientation and basic vocational training. An orientation period at the start of the school year and career orientation as the basic goal of all courses create numerous opportunities for students to become familiar with working life. Company visits and job-sampling days at companies, non-school institutions and workshops help students select their vocation."[4] Polytechnical Schooling is followed by two to four years of Part-Time Vocational Schooling or School Based Apprenticeships.

Technical and Vocational Schooling lasts one to four years. Technical and Vocational Schools that offer one or two year programs, provide a reduced form of vocational education. Programs that last three or four years are completed with a final examination.

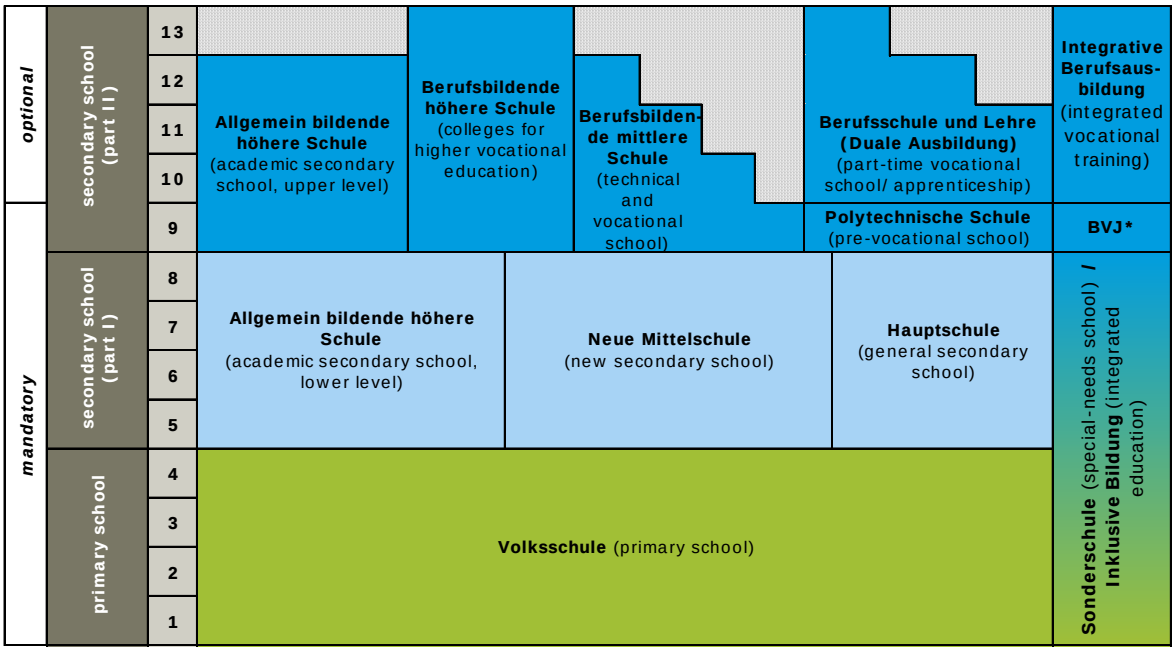
Higher Vocational Education asks students to study for five years and assures an extensive general education as well as a higher vocational education. The Upper Level of Academic Secondary Schooling lasts four years and provides an academic general education. Students of Higher Vocational Schools as well as Academic Secondary Schools complete their education with a final examination. If they pass this examination, they archive the so called *Matura,* a certificate that allows students to enroll at universities, advanced technical colleges, pedagogical universities as well as further academies.

A Prevocational Year followed by an Inclusive Vocational Training allows students with special needs to gain further education. All in all, students are educated for four years.[5]

[4] 4 Bundesministerium für Unterricht, Kunst und Kultur (2013): Compulsory Education: http://www.bmukk.gv.at/enfr/school/bw_en/bw_en_ps.xml

[5] Bundesministerium für Unterrricht, Kunst und Kultur (2013): Bildungswege in Österreich: http://www.bmukk.gv.at/schulen/bw/ueberblick/bildungswege.xml

Image: overview of the education system in Austria



*** BVJ = Berufsvorbereitungsjahr (pre-vocational year)**

1.1.3 Future Changes

Until 2015/2016 all General Secondary Schools shall be replaced by New Secondary Schools. Also Academic Secondary Schools are invited to become a New Secondary School, however they are not obliged to. A survey conducted by the BMUKK has shown that 75% of parents, whose children are attending New Middle Schools have a good or very good impression of this new school type.[6]

1.1.4 Educational decisions and statistics

Similarly to the German school-system the Austrian system demands a relatively early decision on the further educational path. At the age of 10 students change from primary school to secondary education. If they meet the requirement of having good or even better grades or passing an entrance exam, the children could attend an academic secondary school (Gymnasium, Realgymnasium, wirtschaftliches Realgymnasium). The most common alternative and pathway for students with lower abilities are the general secondary schools or new secondary schools. Differences in the development of skills (primary effects) and in educational decisions (secondary effects)[7] lead to heterogeneous chances for education and social inequality.[8]

[6] Bundesministerium für Unterricht, Kunst und Kultur (2011): Studienbericht zur Elternbefragung: Zufriedenheit mit der Neuen Mittelschule: http://www.bmukk.gv.at/schulen/sb/nmselternbefragung2011.xml

[7] For the concept of primary and secondary effects on educational decisions see Boudon, R. (1974): Education, opportunity, and social inequality. New York: Wiley and Sons.

[8] Compare Spielauer, M., Schwarz, F., Städtner, K., & Schmid, K. (2003): Family and education. Intergenerational transmission within families and the influence of education on partner choice and fertility. Analysis and microsimulation projection for Austria. Wien 2003.

Table 1: Number of students in public and private schools for general education

	Public & private schools	
	2010/2011	2011/2012
Primary schools (Volksschulen)	327,663	328,121
General Secondary Schools (Hauptschulen)	192,616	163,659
New Secondary Schools	34,324	56,615
Academic Secondary Schools lower level (AHS-Unterstufe)	112,330	109,203
Academic Secondary Schools and similar upper level (AHS-Oberstufe)	84,888	86,641
Polytechnical schools	18,841	18,022
Special-needs schools	13,198	13,748
Other school-types	13,326	13,596
Overall	**797,186**	**789,605**

Source: Statistik Austria[9], table by RMC DE

Over all a little less than 7,9 million students attended the Austrian schools for general education in 2011/12. There were around 330,000 students on the lower level of secondary education. 34 percent of them attended Academic Secondary Schools on the lower level, 58 percent General Secondary Schools and 8 percent New Secondary Schools.

1.1.5 Subject range

The range of compulsory subjects differs between class levels and school-types. E.g. Latin is just compulsory, if the Academic Secondary School has a classical academic profile.

[9] http://www.statistik.at/web_de/statistiken/bildung_und_kultur/formales_bildungswesen/schulen_schulbesuch/index.html [11.04.2013]

Table 2: Compulsory subjects in Austrian schools

Primary School	New Secondary Schools	Academic Secondary Schools (lower level)
German, Reading, Writing	German	German
Mathematics	Mathematics	Mathematics
Sachunterricht (mixture of geography and science classes)	Biology and environmental studies	Biology and environmental studies
Music	History and Social studies/Political education	Physics
Arts	(Living) Foreign language	(Living) Foreign language
Working with textiles/technical working	Geography and economic studies	Latin
Sports	Arts	History and Social studies/Political education
	Work, Economy or Technics	Geography and economic studies
	Working with textiles/technical working*	Arts
	Home economics and nourishment	Work, Economy or Technics
	Sports	Working with textiles/technical working*
	Religion/Ethics	
	Compulsory exercise job orientation	

Source: Austrian curricula, table by RMC DE

1.2 Curricula in native language and mathematics

Curricula are centrally defined for whole Austria. Curricula for general education contain regulations on the hours in different subjects. In general, Austrian school hours last 45 minutes. The Austrian educational system allows some autonomy regarding curricula. Within a frame, schools can decide about school hours, additional subjects and remedial lessons. Depending on school-type 5 to 10 percent of the hours in the curricula can be defined autonomously by the single schools. About 90 percent of the Austrian schools use the given opportunities to make at least some changes and autonoumous decisions on the hours.[10] For schools that make no use of partial autonomy, the specifications are more detailed.

[10] Schratz, M. & Hartmann, M. (2009): Schulautonomie in Österreich: Bilanz und Perspektiven für eine eigenverantwortliche Schule. In W. Specht (Ed.), Nationaler Bildungsbericht Österreich 2009, Band 2: Fokussierte Analysen bildungspolitischer Schwerpunktthemen. pp. 323-340. Graz: Leykam. https://www.bifie.at/system/files/buch/pdf/2009-06-16_NBB-Band2.pdf [10.04.2013]

Figure 1: Steering model for instruction in Austrian secondary schools

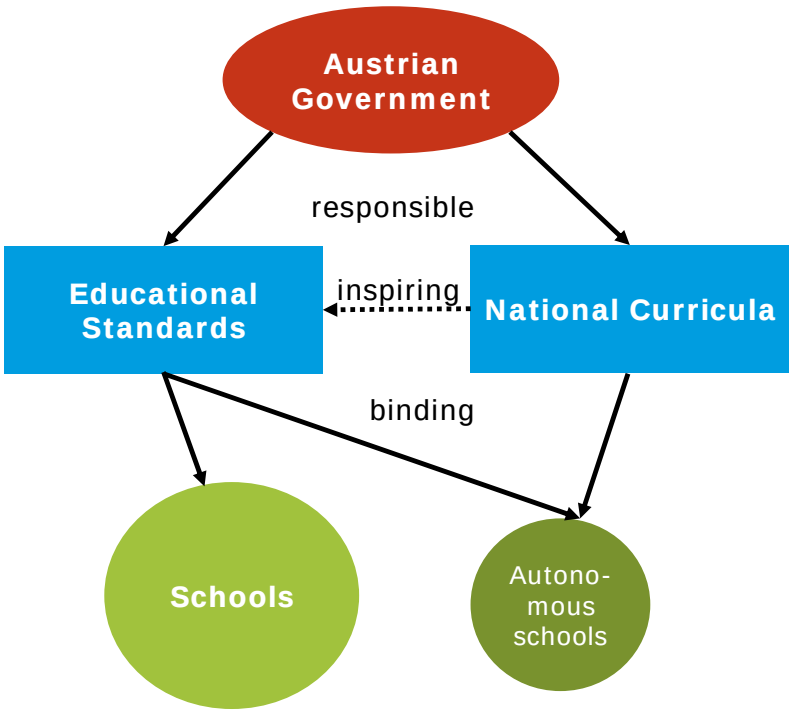


Figure by RMC DE

Apart from the partial autonomy for some schools, the national curricula are binding. Additionally educational standards have been established that define competence-based learning goals and are binding, too (see following section on educational standards). De jure teachers have to implement educational standards as well as the curricula in their instruction. Because of the lack of control mechanisms Austrian teachers are still relatively autonomous, when it comes to their lesson.

Table 3: Number of hours for German in Austrian schools

		Primary school				Secondary school			
		1	2	3	4	5	6	7	8
Regular hours German	basic ability level (General Secondary School)	7	7	7	7	5	4	4	4
	comprehensive ability level (New Secondary School)					4	4	4	4
	high ability level (Academic Secondary School)					4	4	4	4
Regular hours German (autonomous)	basic ability level (General Secondary School)	6-8	6-8	6-8	6-8	15-21			
	comprehensive ability level (New Secondary School)	overall: 30-34				11-22			
	high ability level (Academic Secondary School)					15-21			

Source: BMUKK[11], table by RMC DE

German and mathematics are key subjects in primary as well as in secondary school. The development of German abilities is particularly fostered in primary school. The students attend German classes for seven school hours per week. This number decreases through the transition to secondary school. Still, German is taught relatively often. There are nearly no differences in hours for German between the

[11] Primary school: ; General Secondary School: http://www.bmukk.gv.at/medienpool/868/stundentafel.pdf; New Secondary School: http://www.bmukk.gv.at/medienpool/22513/ bgbla_2012_ii_185_anl1.pdf; Academic Secondary School: http://www.bmukk.gv.at/schulen/unterricht/lp/lp_ahs_unterstufe.xml

types of secondary school. In autonomous secondary schools there is a lot of space for variation, particularly to increase the number of hours for German.

Table 4: Number of hours for Mathematics in Austrian schools (*contains geometrical drawing)

		Primary school				Secondary school			
		1	2	3	4	5	6	7	8
Regular hours Mathematics	basic ability level (General Secondary School)	4	4	4	4	4	4	4	6*
	comprehensive ability level (New Secondary School)					4	4	4	3
	high ability level (Academic Secondary School)					4	4	3	3
Regular hours Mathematics (autonomous)	basic ability level (General Secondary School)	3-5	3-5	3-5	3-5	16-26*			
	comprehensive ability level (New Secondary School)	overall: 14-18				10-20			
	high ability level (Academic Secondary School)					13-18			

Source: BMUKK[12], table by RMC DE

Over all school types and classes the hours for mathematics are very homogenous. Nearly everywhere four hours are specified. Just at the end of the first level of secondary education the number of hours decreases for the New Secondary School as well as for the Academic Secondary School. This happens in favor for science classes. In General Secondary Education geometrical drawing is added to the curriculum and raises the number of hours for mathematics in the table. In autonomous secondary schools there is a lot of space for variation of hours[13]. In New Secondary School the number of hours for mathematics could even be considerably lower than in the non-autonomous schools.

1.3 Curriculum – learning objectives and content

1.3.1 Educational standards

In 2009 Austria established educational standards. By this, Austria followed developments in other European countries, notably the development in Germany. Rationale for educational standards were greater comparability of and accountability for learning results. Learning objectives from curricula were concretized. These learning objectives were defined as results – as abilities and skills. They were systemized in competence models. The theoretical fundament of these competence models is the concept of competence by Franz E. Weinert.[14] In that conceptualization competence basically means being motivated and cognitively able to solve problems flexibly and responsively.

[12] Primary school: http://www.bmukk.gv.at/medienpool/14042/lp_vs_vierter_teil.pdf; General Secondary School: http://www.bmukk.gv.at/medienpool/868/stundentafel.pdf; New Secondary School: http://www.bmukk.gv.at/medienpool/22513/bgbla_2012_ii_185_anl1.pdf; Academic Secondary School: http://www.bmukk.gv.at/schulen/unterricht/lp/lp_ahs_unterstufe.xml

[13] This autonomy is only for the New Secondary School and according to the curriculum they have to increase the hours in other subjects accordingly.

[14] Weinert, F. E. (2001): Concept of competence: A conceptual clarification. In D. S. Rychen & L. H. Salganik (Eds.), Defining and selecting key competencies. (pp. 45-65). Seattle, WA: Hogrefe & Huber.

Table 5: Educational standards for the Austrian school-system

Educational level (school-type)	Grade	Subjects[15]
Primary school	4th	German Mathematics
Secondary School	8th	German Mathematics English

Educational standards exist for the 4th and the 8th class level. For schools and teachers they are binding as much as curricula. Thus, teachers have to consider curricula and educational standards, if they plan and prepare their lessons. The educational standards weigh different competence areas with their abilities, skills and actions quite equally. Educational experts state, that this challenges the teacher and leads to more balance between different topics of classes.[16]

The Austrian educational standards show a very similar systematic as the German educational standards. First general areas of competence are defined. Then, these areas are broken down to sub-areas of competences. Further concretization may follow.

The educational standards for German in 4th grade of primary school define following general areas of competence:

- listening, speaking and talking
- reading, dealing with texts and media
- creating texts
- orthography
- insight into the language by examination

These competence areas experience two concretizations (see table).[17] For the 8th grade, the competence areas are quite similar to the system for the 4th grade. The competence areas are

- listening and talking
- reading
- writing
- language awareness

Regarding abilities, skills and concrete actions the educational standards for the 8th grade stay so general (e.g. age-adequate reading skills), that there are not many differences to the concretization for the 4th grade.

[15] Also basic competences for Latin are defined, but currently these definitions have not the same status as educational standards as the other subjects. There are no nationwide tests of the basic competences in Latin.

[16] Derived from the interviews with Austrian experts on curricula and educational standards.

[17] Different from Germany, the central documents about the Austrian educational standards do not contain examples for questions, tasks and exercises.

Table 6: Educational standards for the primary school (4th grade) in Austria, German, Reading, Writing

Generals area of competence	First Concretization	Further Concretization
Listening, speaking and talking	- clear telling and understanding listening - collecting and giving information - ...	- listening carefully (listening) - ... - collecting information about animate beings, things and factual connections (collecting) - ...
Reading, dealing with texts and media	- stabilizing and deepening reading motivation and interest - having age-adequate reading skills and a corresponding understanding - ...	- chose books and texts by own interest (interest) - ... - showing the ability to read simple texts (reading skills) - ...
Creating texts	- using opportunities to write; planning texts - intentional writing - ...	- recognize interesting contents (planning) - ... - writing to express experiences, feelings and ideas (intentional) - ...
Orthography	- writing known words correctly - knowing the rules for writing correctly - ...	- use words correctly in sentences and texts (writing) - ... - knowing most important rules of orthography (knowing) - ...
Insight into the language by examination	- clarifying verbal understanding - using opportunities for forming words for a deeper understanding - ...	- distinguish qualities and functions of spoken and written language (clarifying) - ... - recognize words of the same word stem - ...

Source: bifie[18], table by RMC DE

While the competence model for German is pretty much the same for the 4th and the 8th grade, the competence model for mathematics becomes more complex. For the 4th grade of primary school, the educational standards describe four general mathematical competence areas and four content areas. It's a two-dimensional model where every combination of general mathematical competences and contents is possible. Students will solve problems by applying operations. The educational standards also concretize the different competences and contents.

Table 7: Educational standards for primary school (4th grade) in Austria, Mathematics

General mathematical competence	Content area
Modelling	Working with numbers
Operating	Working with operations
Communicating	Working with measures
Problem solving	Working with plane and space

Source: bifie[19], table by RMC DE

The educational standards for the 8th grade are based on a three-dimensional competence-model. The three dimensions are: 1. Areas of action, 2. Areas of content, and 3. Areas of complexity. The com-

[18] https://www.bifie.at/system/files/dl/bist_d_vs_kompetenzbereiche_d4_2011-08-19.pdf [10.04.2013]
[19] https://www.bifie.at/system/files/dl/bist_m_vs_kompetenzbereiche_m4_2011-08-19.pdf [11.04.2013]

plexity influences the objective requirements, but it's no measure for subjective and psychometric difficulty.

Table 8: Educational standards for the secondary school (8th grade) in Austria, Mathematics

Areas of action	Concretization
Presenting, Modelling	- translating every-day language into mathematics - choosing adequate mathematical methods and solution paths - ...
Calculating, operating	- using elemental calculation operations, exponentiating, extracting roots - using formulas, calculating values - ...
Interpreting	- reading tables and graphs, - interpreting results in context - ...
Arguing, Reasoning	- using mathematical arguments for using mathematical expressions, models or representations - formulating hypotheses - ...
Areas of content	**Concretization**
Numbers and measurements	- natural, rational numbers - calculation operations, laws and rules for calculations - ...
Variables, functional interdependencies	- Variables and terms - linear equation with two variables - ...
Geometrical figures and solid figures	- symmetry, similarity - triangles, quadrangles, circles - ...
Statistical presentation and characteristic number	- tables for statistical data - arithmetic means - ...
Areas of complexity	**Concretization**
Using basic knowledge and skills	- reproducing mathematical knowledge and skills - ...
Connecting	- connecting mathematical concepts, methods, representations etc. for solving a problem - ...
Use reflection knowledge, reflecting	- thinking about methods, models, solutions - interpreting, arguing, reasoning - ...

Source: bifie[20], table by RMC DE

Between the three areas of mathematical competence-model every combination theoretically possible, even though some come more naturally than others. Interpreting geometrical figures would require reflecting rather than just reproducing mathematical knowledge.[21]

[20] https://www.bifie.at/system/files/dl/bist_m_sek1_kompetenzbereiche_m8_2013-03-28.pdf [11.04.2013]

[21] https://www.bifie.at/node/49

Figure 2: Three-dimensional Competence Model for mathematics in Austrian Secondary School

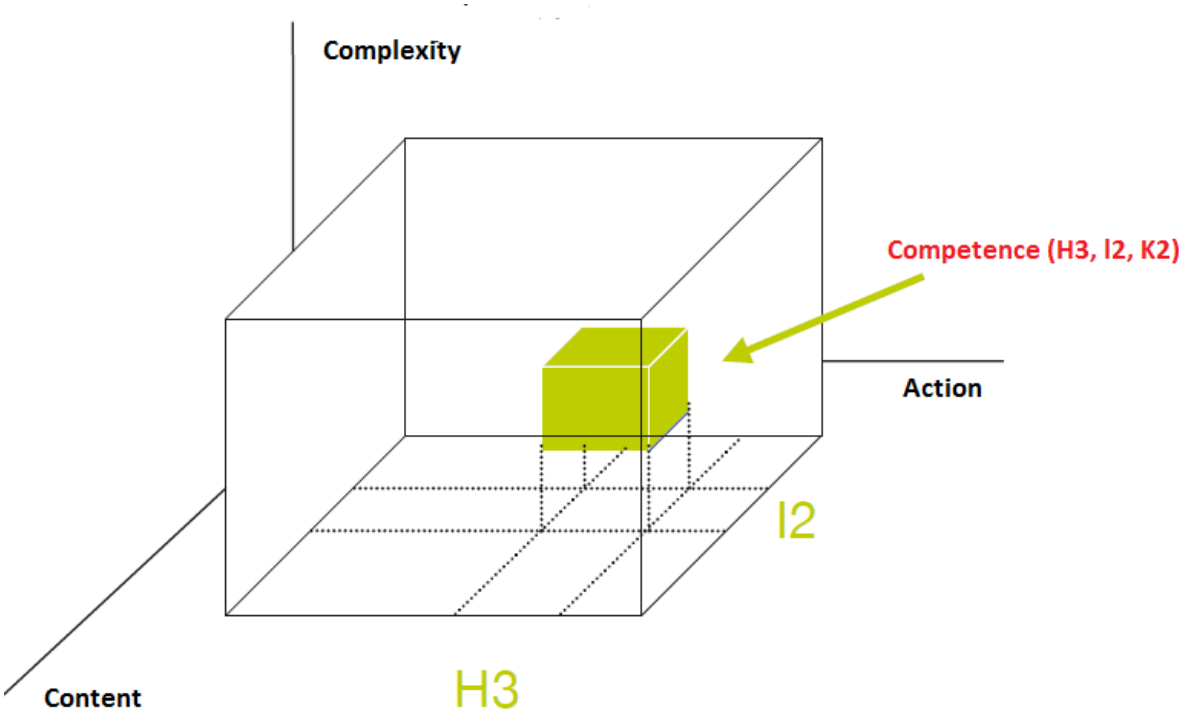


Figure by the Bundesinstitut for Educational Research, Innovation, & Development of the Austrian Schools (biefie), translated

1.3.2 Curricula

The Austrian curricula for general education are quite old. For instance, the Austrian curriculum for primary school exists since 1986. The educational standards were established in 2009. They were derived from the curricula. The educational standards make learning objectives measurable. They formulate clearer tasks for instruction. They should now inspire the reform of curricula. The curricula haven't been revised since the establishment of the educational standards. The teacher is obliged to follow the educational standards as well as the curricula.

In the curriculum for primary schools broad categories are formulated, for German these categories are reading, writing etc., for mathematics calculating, geography etc. On the left side of the pages, comprehensive main goals are defined. On the right side of the page, these goals get concretized. Goals and their concretizations are formulated as contents, abilities, skills, actions. Thus, the curricula show some similarities to the competence-based educational standards, but they are not that systematic. Thus, a learning objective in the curricula for German language could be "getting to know technical means tor information collection".[22] This is more a description of a process than of a goal or competence.

1.3.3 Learning objectives

Over all, the Austrian curriculum for primary school is not as systematic as the educational standards. Categories and concepts are not used consequently. The curriculum is not explicitly competence-based. But many goals are formulated as abilities, skills, and actions. In the Austrian curriculum for primary schools general didactical principles are formulated for learning and instruction in German. They consider the different general goals like reading or writing. The didactical principles stay quite general. For reading the curriculum says, that exercises should be used, and that they should be diversified and interesting.[23]

[22] Compare curriculum in German language for the General Secondary School: http://www.bmukk.gv.at/medienpool/886/hs22.pdf

[23] http://www.bmukk.gv.at/medienpool/3994/VS7T_Deutsch.pdf [11.04.2013]

Table 9: Content of the Austrian curricula for German and mathematics

class	native language	mathematics
Primary school (Volksschule)		
4	• Talking: listening carefully, talk about the thing heard, using adequate language for different situations, telling about experiences, learning new words, using language correctly, expressing feeling, thought, and wishes… • Reading: reading often, reading different types of texts, fictional and non-fictional texts, reading and interpreting texts autonomously, compare texts, • Writing/Orthography: writing correctly, using strategies for correct writing, … • Creating texts: writing consciously, structuring thoughts, writing texts about own experiences, use adequate language, … • Examination of language: Deal with different parts of the sentence, using temporal adverbs, knowing about the composition of words, knowing word families, …	• System of natural numbers: dealing with numbers up to 1.000.000, comparing numbers, • Calculating/Operations: using addition, subtraction, multiplication, division, multiply with one- and two-digit multiplier, divide with one- or two-digit divisor, explaining calculations, dealing with fractions • Measures: dealing with measures for planes and space, comparing and transforming measures, • Geometry: spatial orientation, present and describe planes and solid figures, develop an understanding of area, measuring, drawing figures

Source: BMUKK[24], table by RMC DE

The curriculum for mathematics in primary schools names broad categories and describes a lot of goals for primary school. Goals are formulated for the first basic level (1st and 2nd grade) and the 3rd and the 4th grades separately.

The curriculum for German in secondary school (Hauptschule respectively Neue Mittelschule as well as AHS) has a general part for all class levels, and a specific part for single class levels. In the general part didactical principles are defined. They stay quite general, e.g. in respect to the examination of language and orthography it's written that grammar has to be taught age-adequately. But no more instructions were given.

The curriculum for mathematics secondary school (Hauptschule respectively Neue Mittelschule as well as AHS) starts with the description of general learning goals. Didactical principals are defined. As in the other curricula, these didactical principals are quite general. The goals for the different class levels are following a categorization. The single goals are formulated inconsistently. Some describe abilities, skills or actions like the educational standards, but others name contents or even instructional methods.

class	German	mathematics
Secondary school (Hauptschule, Neue Mittelschule*, AHS-Unterstufe)		
8	• Language as fundament of relationships: telling about experiences, thoughts etc., estimating the effects of telling, formulating understandable… • Language as carrier of information from different domains: finding information, using libraries, understanding information, learning about different topics … • Language as creative tool: reading and understanding literature, getting insights into the creation and development of texts, knowing about different media, using narrative techniques to create texts… • Examination of language and orthography: applying knowledge about language, getting an insight into structure and func-	• Working with numbers and measures: making the understanding of numbers deeper, understanding, that not every mathematical problem can be solved with rational numbers, reflecting on mathematical applications, … • Working with variables: increase the adequacy of working with variables, formulas, and equations, presenting graphical representations of two variables, … • Working with figures and solid figures: applying Pythagoras' theorem, knowing how to present different calculations with variables, applying formulas for the calculation of areas etc., … • Working with models, statistics: knowing

[24] http://www.bmukk.gv.at/medienpool/3994/VS7T_Deutsch.pdf

class	German	mathematics
Secondary school (Hauptschule, Neue Mittelschule*, AHS-Unterstufe)		
	tion of sentences, learning about word- and sentence-grammar, extend the knowledge about words, using aids like dictionaries, electronic programs, …	how to examine increasing and decreasing processes with electronic aids, using statistical measures like mean, median etc., …

Source: BMUKK[25]; * The curricula for the Neue Mittelschule, which will replace the Hauptschule, are very similar to the curricula for the Hauptschule. To a great extent the differences are limited to the formatting.

From the interviews of the experts could be derived, that the Austrian school system changes. One expert even said that the establishment of educational standards is a change of paradigm. Educational standards mean more clarity about learning objectives, more evaluation, more reflection and more accountability. All experts stated that educational standards did make a change, and influence the reform of curricula in Austria. One expert perceived that there is more balance between different learning objectives into the schools. And the formulation of general competences like communicating and arguing in mathematics brought something new to the schools. Of course, the education and training of teachers at universities consider the educational standards.

Still, Austrian teachers stay autonomous when it comes to their instruction. And there are no consequences of the nationwide standard tests. But in many schools the information is used for quality development. But the establishment of educational standards and particularly the standard test seem also to worry some teacher. One expert stated that with educational standards some teacher feel more stressed. Now they are obliged to follow two complex manuals in their lessons.

1.4 Linkage of learning objectives in pre-school and youth education

1.4.1 Pre-school and transition to primary school[26]

In Austria, compulsory education starts at the age of six. Before this age, a lot of children are attending kindergarten. Kindergartens are taking care of more than 90 percent of the Austrian children from three up to five years.[27] One important goal of the kindergarten is to prepare the children for school. In 2009 an educational framework for elementary education in Austria was established. The framework defines five competence areas being already relevant for children before they start with school:

1. Self-competence or personal competence, e.g. a positive self-concept, autonomy, resilience
2. Social competence or socio-communicative competence, which means being capable to act and evaluate in social situations, to be empathetic etc.
3. Subject-competence, which demands exploring, comprehending, fantasy and motivation
4. Learning-methodological competence, which means being conscious about learning processes and knowing learning strategies
5. Meta-competence, the ability to evaluate own competences, their development and adequate use

[25] German in the Hauptschule: http://www.bmukk.gv.at/medienpool/886/hs22.pdf; mathematics Hauptschule: http://www.bmukk.gv.at/ medienpool/881/hs17.pdf; Neue Mittelschule: http://www.bmukk.gv.at/medienpool/22513/bgbla_2012_ii_185_an l1.pdf; German AHS-Unterstufe: http://www.bmukk.gv.at/medienpool/781/ahs7.pdf; mathematics AHS-Unterstufe: http://www.bmukk.gv.at/medienpool/789/ahs14.pdf

[26] For an overview over elementary education before school see Stanzel-Tischler & Breit, Simone (2009): Frühkindliche Bildung, Betreuung und Erziehung und die Phase des Schuleintritts. In W. Specht (Ed.), Nationaler Bildungsbericht Österreich 2009, Band 2: Fokussierte Analysen bildungspolitischer Schwerpunktthemen. pp. 15-32. Graz: Leykam. https://www.bifie.at/buch/1024/a/1

[27] Statistik Austria: http://www.statistik.at/web_de/statistiken/bildung_und_kultur/formales_bildungswesen/kindertagesheime_ kinderbetreuung/index.html

The framework also names means and conditions for the development of these competences in institutions for child care. And it describes educational areas for the development of the competences.

These areas are:

1. Emotions and social relationships
2. Ethics and society
3. Language and communication
4. Activity and health
5. Aesthetics and creativity
6. Nature and technique

It's possible to find all these competences and educational areas also in the curricula for the primary and secondary schools. The framework for elementary education also addresses directly the transition to primary school.[28] Over all, the framework provides fundamental knowledge and ideas for educational work in kindergarten. The plan is not binding, but nevertheless sets the frame for institutional care for small children. In addition, some federal states established a complementary educational plan for kindergartens.[29]

If children at the age of six aren't able to follow regular classes on first class level yet, they have to attend pre-school. Pre-school has its own curriculum respectively it's part of the whole curriculum for primary school. The curriculum for pre-school contains 3,5 school hours for language and talking, preparation for reading and writing and 1,5 school hours mathematical early education. Over all, pre-school lasts 20 hours per week. The learning objectives are connected to the learning objectives in primary school.[30]

Austrian primary school starts with a flexible entrance phase. This phase encompasses pre-school and the first two class levels. 1st and 2nd grade are also defined as one basic educational level. Depending on their abilities, children stay regularly two, but also one or three years on this basic educational level. They can change the class level even during the school year.

1.4.2 Youth education and transition from secondary school

After successfully finishing the 8th grade in General Secondary School, New Secondary School or the lower level of Academic Secondary School, students generally change to the next school. Some attend the upper level of Academic Secondary School, some go to the Polytechnical School, others change into schools for vocational education. The curricula of these school types for upper secondary or vocational education follow the curricula of the secondary schools. The upper level of the Academic Secondary School continues with similar but advancing learning objectives as the lower level.[31] The Polytechnical School introduces some new, mostly technical subjects. Still, German and mathematics are taught, the goals particularly similar to the goals for the General Secondary Schools.[32] Also, the curricula of the vocational schools tie in with the learning goals of the secondary schools.[33]

1.5 Curriculum and learning objectives supporting teaching, planning, evaluation, and involvement of parents and students

1.5.1 Support of teachers teaching, planning and evaluation

The Austrian curricula for general education define fundamental didactical principles and present didactical suggestions for the work with subjects. All these information in the curricula stays general. It is more a framework for learning and instruction than concrete help with teaching and planning. For this

[28] Ämter der Landesregierungen der österreichen Bundesländer et al. (Eds.) (2009): Bundesländerübergreifender BildungsRahmenPlan für elementare Bildungseinrichtungen in Österreich. http://www.bmukk.gv.at/medienpool/18698/bildungsrahmenplan.pdf [11.04.2013]

[29] E.g. Land Niederösterreich (Ed.) (2010): Bildungsplan für Kindergärten in Niederösterreich. http://www.noe.gv.at/ bilder/d48/BP2_Rahmenplan_Niederoesterreich.pdf?19368 [11.04.2013]

[30] http://www.bmukk.gv.at/medienpool/14055/lp_vs_gesamt.pd

[31] Compare http://www.bmukk.gv.at/schulen/unterricht/lp/lp_ahs_oberstufe.xml

[32] http://www.schule.at/fileadmin/DAM/Gegenstandsportale/Polytechnische_Schule/Dateien/PTSLehrplan-2012.pdf

[33] Compare http://www.bmukk.gv.at/schulen/unterricht/lp/lp_bbs.xml

purpose the Austrian ministry for instruction, arts and culture (BMUKK) provides the homepage "gemeinsamlernen.at". Teacher will find examples for instruction here. They find links to further information and service.[34] For German instruction concept for creating a comic strip can be downloaded. A detailed plan for the instruction sequence is given and a work sheet with pictures is provided. The homepage also includes many exercises for mathematics, e.g. a construction exercise to basically calculate the area of public square. The exercises and examples for instruction are provided by teachers.

The periodic nationwide standard tests in 4th and 8th grade provide information on the effectiveness of the Austrian school system. In 2012 these tests started with mathematics, in 2013 German follows, 2014 the students will be tested in English. The nationwide standard testing includes feedback of the results on school and class level. Thus, schools and teachers can evaluate their performance and use the date for quality development.[35]

1.5.2 Involving of parents and students

In the Austrian curricula the topic of parental involvement and student participation is hardly mentioned. Nevertheless, aside from the curricula working with parents and students play a role, e.g. with health promotion in school.[36] There are just a few empirical studies on parental involvement in Austrian schools. For elementary education it was shown that Austrian parents are less involved in the school of their children than Amercians. Differences between different subjects exist.[37]

1.6 The use of IT supported teaching and digitalized learning objectives

Austrian curricula for general education contain a few learning goals relating to information technology. There is introduction into informatics as an voluntary subject in the Austrian curricula. But these goals are not very elaborated. For the lower level of Academic Generals Schools just one paragraph defines the learning objectives for informatics. The students should become confident users of computers and peripheral devices as well as typical user software. They should learn a general competence of using new technologies.[38] Of course, apart for the curricula there are several concepts and materials for informatics in secondary school, e.g. by the institute for didactics in informatics of the University of Salzburg.[39] In subjects like German or even mathematics there are just a few of them. And when, their formulation is quite general. "Being capable of using electronic aids" is an example from the curriculum for mathematics on the lower level of the Academic Secondary School.[40] Still, many Austrian schools – particularly primary schools – haven't a sufficient number of computers and no fast connection to the internet.

Currently, E-learning still isn't a typical task for Austrian schools. Even in the online-network gemeinsamlernen.at there are just a few examples for e-learning.[41]

---

[34] www.gemeinsamlernen.at

[35] http://www.bmukk.gv.at/schulen/unterricht/lp/lp_bbs.xml

[36] http://www.gesundeschule.at/wp-content/uploads/Eltner-und-Schule-als-Parnter.pdf

[37] Krumm, Volker (1990): Parent Involvement in the USA and Austria. Internet ressource: http://search.proquest.com.ubproxy.ub.uni-frankfurt.de/docview/62974868?accountid=10957

[38] http://www.bmukk.gv.at/medienpool/795/ahs20.pdf

[39] See http://www.uni-salzburg.at/portal/page?_pageid=188,117741&_dad=portal&_schema=PORTAL

[40] http://www.bmukk.gv.at/medienpool/789/ahs14.pdf

[41] Compare subdivision „Unterricht" of the homepage „www.gemeinsamlernen.at"

Annex

Reports/Literature used:

Ämter der Landesregierungen der österreichen Bundesländer et al. (Eds.) (2009): Bundesländerübergreifender BildungsRahmenPlan für elementare Bildungseinrichtungen in Österreich. http://www.bmukk.gv.at/medienpool/18698/bildungsrahmenplan.pdf
Boudon, R. (1974): Education, opportunity, and social inequality. New York: Wiley and Sons
Bundesministerium für Unterricht, Kunst und Kultur in Zusammenarbeit mit Bundesministerium für Wissenschaft und Forschung (2008): Bildungsentwicklung in Österreich: http://www.bmukk.gv.at/medienpool/17146/bildungsentwicklung_07.pdf

Krumm, Volker (1990): Parent Involvement in the USA and Austria. Internet ressource: http://search.proquest.com.ubproxy.ub.uni-frankfurt.de/docview/62974868?accountid=10957
Land Niederösterreich (Ed.) (2010): Bildungsplan für Kindergärten in Niederösterreich. http://www.noe.gv.at/ bilder/d48/BP2_Rahmenplan_Niederoesterreich.pdf?19368

Schratz, M. & Hartmann, M. (2009): Schulautonomie in Österreich: Bilanz und Perspektiven für eine eigenverantwortliche Schule. In W. Specht (Ed.), Nationaler Bildungsbericht Österreich 2009, Band 2: Fokussierte Analysen bildungspolitischer Schwerpunktthemen. pp. 323-340. Graz: Leykam. https://www.bifie.at/system/files/buch/pdf/2009-06-16_NBB-Band2.pdf

Spielauer, M., Schwarz, F., Städtner, K., & Schmid, K. (2003): Family and education. Intergenerational transmission within families and the influence of education on partner choice and fertility. Analysis and microsimulation projection for Austria. Wien 2003.

Stanzel-Tischler & Breit, Simone (2009): Frühkindliche Bildung, Betreuung und Erziehung und die Phase des Schuleintritts. In W. Specht (Ed.), Nationaler Bildungsbericht Österreich 2009, Band 2: Fokussierte Analysen bildungspolitischer Schwerpunktthemen. pp. 15-32. Graz: Leykam. https://www.bifie.at/buch/1024/a/1

Weinert, F. E. (2001): Concept of competence: A conceptual clarification. In D. S. Rychen & L. H. Salganik (Eds.), Defining and selecting key competencies. (pp. 45-65). Seattle, WA: Hogrefe & Huber.

Webpages:

Bundesministerium für Unterricht, Kunst und Kultur:

- http://www.bmukk.gv.at/enfr/school/ bw_en/bw_en_ps.xml
- http://www.bmukk.gv.at/medienpool/14042/lp_vs_vierter_teil.pdf
- http://www.bmukk.gv.at/medienpool/14055/lp_vs_gesamt.pd
- http://www.bmukk.gv.at/medienpool/22513/bgbla_2012_ii_185_an l1.pdf
- http://www.bmukk.gv.at/medienpool/3994/VS7T_Deutsch.pdf
- http://www.bmukk.gv.at/medienpool/781/ahs7.pdf
- http://www.bmukk.gv.at/medienpool/868/stundentafel.pdf
- http://www.bmukk.gv.at/medienpool/886/hs22.pd
- http://www.bmukk.gv.at/medienpool/886/hs22.pdf
- http://www.bmukk.gv.at/schulen/bw/ueberblick/bildungswege.xml
- http://www.bmukk.gv.at/schulen/sb/nmselternbefragung2011.xml
- http://www.bmukk.gv.at/schulen/unterricht/lp/lp_ahs_unterstufe.xml
- http://www.bmukk.gv.at/schulen/unterricht/lp/lp_bbs.xml

Projekt Gesunde Schule:

- http://www.gesundeschule.at/wp-content/uploads/Eltner-und-Schule-als-Parnter.pdf

Schule.at

- http://www.schule.at/fileadmin/DAM/Gegenstandsportale/Polytechnische_Schule/Dateien/PTSLehrplan-2012.pdf

Statistik Austria

- http://www.statistik.at/web_de/statistiken/bildung_und_kultur/formales_bildungswesen/schulen_schulbesuch/index.html
- http://www.statistik.at/web_de/statistiken/bildung_und_kultur/formales_bildungswesen/kindertagesheime_ kinderbetreuung/index.html

Bundesinstitut für Bildungsforschung, Innovation und Entwicklung des österreichischen Schulwesens:

- https://www.bifie.at/node/49
- https://www.bifie.at/system/files/dl/bist_d_vs_kompetenzbereiche_d4_2011-08-19.pdf
- https://www.bifie.at/system/files/dl/bist_m_sek1_kompetenzbereiche_m8_2013-03-28.pdf

Plattform gemeinsamlernen.at

- www.gemeinsamlernen.at

Persons interviewed:

Doris Latschen
Edith Schneider
Elfriede Witschel

Appendix

(Colours indicate level)

Units	Elements	Characteristics	Compulsory
Educational standards			Yes
Competencies	• German • Mathematics • English • Latin (basic competences) just in Academic Secondary School	Competencies	Yes
Competence levels	• Secondary School (8th grade)	Competency level	Yes
Curricula			
Subjects	Common denominator for all federal states and: • German • Mathematics • One foreign language • History and social studies • Geography and economic studies • One science class • Religion or ethics • Arts or music • Sports Additional subjects dependent on federal state and school-type	Content based (though partly competence-oriented formulated)	Yes
Learning levels	Definition of learning objectives for every class level in the different school-types	Descriptive	Yes

2. GERMANY

The following country report provides a systematic review and description of the curricula for native language and mathematics in Germany's primary and lower secondary schools. It starts with a brief overview over the German school-system and the steering model for education. A special feature of Germany is that the federal states (the "Länder") are fully responsible for education. Thus, the German educational system is very heterogeneous. That's particularly true for curricula. Therefore, the report focusses on a sample of federal states, namely Bavaria, Hesse, and Schleswig-Holstein.

General conditions and similarities of the curricula are described on a national level. Here, educational standards are an important topic. Special regulations, different time tables and learning objectives etc. are described on the state-level.

This report uses information from desk research on legislation and regulation. In addition, experts for curricula and educational standards in Germany were interviewed by Rambøll. These experts were: Sabine Dörnhaus from the institute for quality development in schools Schleswig-Holstein (IQSH), responsible for curricula in Schleswig-Holstein. Dr. Christian Fischer, educational researcher and teacher in Schleswig-Holstein. Thomas Sachsenröder, director of the state institute for school quality and educational research Munich (ISB). Claudia Urban teacher and member of the ISB, responsible for the Bavarian curricula for mathematics in primary school. The experts gave factual information, explained their view on curricula and recommended documents and literature on the topic.

Ramboll uses the report to synthesize across the countries studied to the client, Danish Ministry of Children and Education.

2.1 Characteristics of the education system and steering model

2.1.1 The steering model of the school system[1]

In Germany education is in the responsibility of the federal states. Education is one of the last policy areas, where far-reaching decisions are made in German state-parliaments. On federal-level the competencies are limited to setting the frame for education in Germany. These federal competencies apply nearly exclusively to vocational education and universities. Aside from these competencies the federal government influences education by support programs. From 2003 to 2009 the installation and development of all-day schools were promoted by a federal program of four billion Euros.[2]

De jure, internal school matters are exclusively in the competence of the federal states. Federal states decide on school laws and regulations, on school-structure, curricula and exams, on the authorization of schoolbooks and the necessary qualifications of teachers. Just external school matters like the administration of school buildings and material expenses are in the responsibility of municipalities. Apart from that, most of the schools are financed (even private schools co-financed) by the federal states.

For achieving some unity, the federal states cooperate through different boards. With respect to schools, the standing conference of the ministers of education and cultural affairs (Kultusministerkonferenz, *short:* KMK) is the most important board for federal cooperation. The KMK is the place to agree upon comparable school reports and education certificates, to foster quality standards and to promote cooperation between educational, scientific and cultural institutions. It was the KMK, that decided to take part in international educational studies like PISA or TIMSS, and it was the KMK, that agreed upon educational standards.

Despite constant efforts to federal cooperation the German school-system today is quite heterogeneous. And with its highly dynamic development since the late 1990s the differences between the states

[1] For a detailed description of the German educational system see Secretariat of the Standing Conference of the Ministers of Education and Cultural Affairs of the Länder in the Federal Republic of Germany (Ed.): The Education System in the Federal Republic of Germany 2010/2011. A description of the responsibilities, structures and developments in education policy for the exchange of information in Europe. http://www.kmk.org/fileadmin/doc/Dokumentation/Bildungswesen_en_pdfs/en-2012.pdf [10.04.2013]

[2] The federal programme was named „investment programme future education and care" (Investitionsprogramm Zukunft Bildung und Betreuung, *short:* IZBB). For a (German) description of the program see: http://www.ganztagsschulen.org/de/868.php.

have even increased. This concerns the introduction of new school-types as well as the reform of curricula and the implementation of educational standards.

2.1.2 School-types

With sixteen federal states who decide autonomously about their school-system, the German educational landscape has become very complex. With the abolishment of old and the introduction of new school-types, the shortening of school years, the implementation of educational standards etc., even the situation within single states can be confusing. Nevertheless, the German school-system has some overall and constant characteristics:

1. Compulsory education starts on the age of six and lasts for nine years
2. Primary and secondary education are divided into different school types
3. Different secondary school-types standing for different educational paths leading to different certificates and qualifications

Within this frame many variations exist. For instance, primary schools generally include four class levels, but in Berlin and Brandenburg they include six.

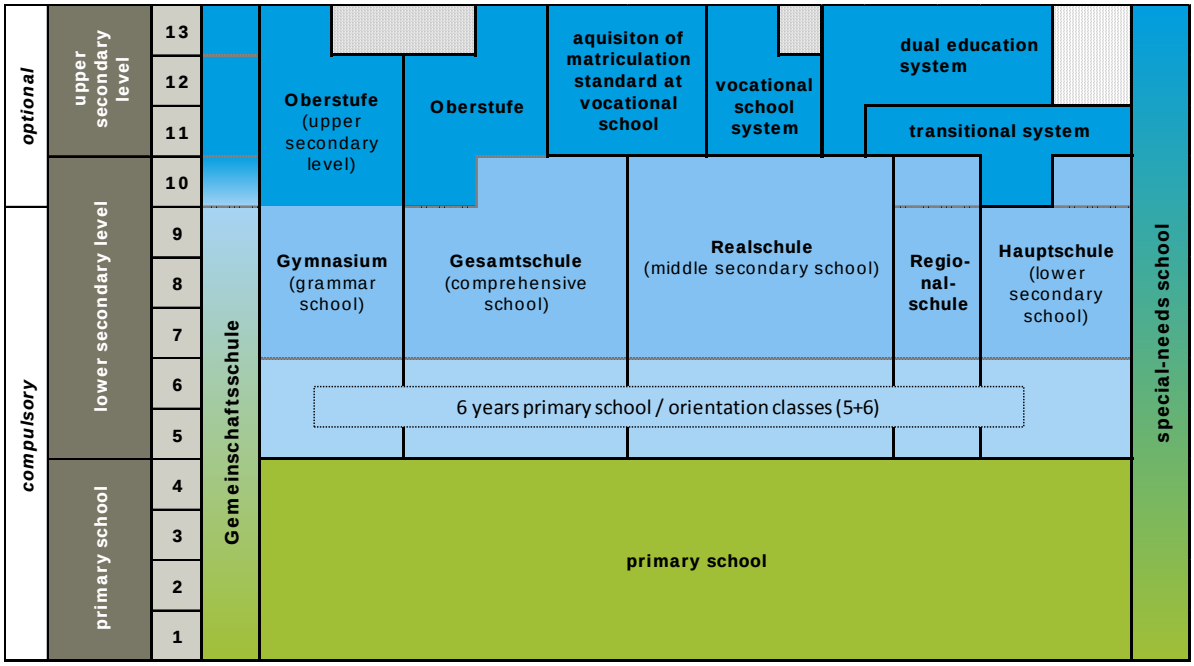
Typically Germany had a three track school-system. The Hauptschule (lower secondary school) lasts 9 years and provides its students basic general education. The Realschule (middle secondary school) lasts 10 years and provides extended general education. And the Gymnasium (grammar school) lasts 12 or 13 years (dependent on state and school) and provides intensified general education leading to the Abitur. The Abitur still is not the only but the direct way to universities. In consequence, the tracking represents ability grouping. Next to the classic three school-types there are Gesamtschulen (comprehensive schools), their number growing since the 1970s. Gesamtschulen offer different courses of education, generally also the path to the Abitur.[3] For Students with special-needs special schools exist.

Since the early 1990s the three-track school-system becomes more and more a two-track school-system. Hauptschule and Realschule slowly disappear. They are replaced by school-types like Mittelschulen (middle schools), Oberschulen (upper schools), Regionalschulen (regional schools) or Sekundarschulen (secondary schools). Whatever their names are, these school-types have in common, that they offer the qualifications and certificates of the Hauptschule and the Realschule. The development to a two-track school-system started in the new federal-states – the former German Democratic Republic (GDR). One reason for the development is the demographic change and migration to the cities. In rural areas separate Haupt- and Realschulen become too small. This is also connected to the second reason for the development, the decreasing attractiveness particularly of the Hauptschule. While less students start at the Hauptschule, more students find their way to the Gymnasium.[4]

[3] In this country report we just name the most common school-types. There are some more, mostly private schools with special didactic concepts, e.g. Waldorfschulen (Rudolf Steiner schools).

[4] Compare Autorengruppe Bildungsberichterstattung (2012): Bildung in Deutschland 2012. Ein indikatorengestützter Bericht mit einer Analyse zur kulturellen Bildung im Lebenslauf. Bielefeld: wbv. p. 68. http://www.bildungsbericht.de/daten2012/bb_2012.pdf [09.04.2013]

Image: overview of the education system in Germany



Source: Illustration by RMC DE

Currently, the Gemeinschaftsschule (community school) arises as an alternative to the described schools. The Gemeinschaftsschule is conceptualized as a school for everybody – from students with special needs up to high achieving students. The Gemeinschaftsschule starts with the 1st grade and leads up to the 10th. Ideally, the Gemeinschaftsschule also contains an upper secondary level and gives the opportunity to achieve the Abitur. In states like Berlin and Nordrhein-Westfalen the Gemeinschaftsschule is still in trial stage.[5] In Schleswig-Holstein the Gemeinschaftsschule is planned to replace the Regionalschule, thus being the inheritor of Hauptschule and Realschule.

2.1.3 Educational decisions and statistics

In most of the federal states (currently 12 of 16) the parents have the exclusive power to decide about the school type for their child. The primary school gives a recommendation, but the parents are free to decide differently. In federal states like Bavaria or Saxonia students need good grades in primary school, if they want to attend the Gymnasium. Alternatively they could pass an additional test or take part in trial lessons. No matter if the educational decision at the end of the primary school is liberal or not, the decision contributes to social inequality. Students from higher social classes are more likely to attend the Gymnasium than students from lower social classes – independent from their ability.[6]

[5] Compare Senatsverwaltung für Bildung, Jugend und Wissenschaft (Ed.) (2012): Wissenschaftliche Begleitung der Pilotphase Gemeinschaftsschule Berlin. Bericht 2012. http://www.berlin.de/imperia/md/content/sen-bildung/bildungswege/gemeinschaftsschule/ wissenschaftl_begleitstudie_gms_2012.pdf [09.04.2013]

[6] There is a long academic discussion on this phenomenon and its reasons, compare Pietsch, M., Stubbe, T. C. (2007). Inequality in the transition from primary to secondary school: school choices and educational disparities in Germany. European Educational Research Journal. 6 (4), 424-445.

Table 1: Number of students in public and private schools

	Public & private schools	
	2010/2011	2011/2012
Primary schools	2.919.854	2.874.108
Orientation schools	117.405	106.800
Hauptschulen (lower secondary schools)	728.488	681.554
Realschulen (middle secondary schools)	1.280.767	1.243.096
Gymnasien (grammar schools)	2.754.215	2.710.612
Comprehensive schools and schools including two and more tracks	991.331	1.085.641
Rudolf Steiner schools	161.686	163.150
Special-needs schools	449.057	436.821
Overall	**9.412.803**	**9.301.782**

Source: Statistische Bundesamt[7], table by RMC DE

In the school-year 2011/2012 overall 9.3 million students attended the German schools for general education (special-needs schools included). A little bit more than 8 percent of the students went to private schools, and more than 81 percent attended public schools. The Gymnasium was the most popular school-type. Nearly 42 percent of the secondary students chose the Gymnasium. Approximately 19 percent went to the Realschule, 11 percent to the Hauptschule. Comprehensive schools and schools including different tracks were chosen by 17 percent of the students.

The typical class size in primary school is about 20 students, in secondary school up to 30 students. An average of 8 percent of the students have a migration background. The percentages vary between school-types. In the Hauptschulen 19 percent of the students have a migrational background, in the Gymnasien 4 percent.[8]

2.1.4 Sample states for the study

Still, a lot of differences between the curricula of the German states exist. To illustrate these differences we chose Bavaria and Schleswig-Holstein for a more detailed description of the curricula and their learning objectives in German and Mathematics.

Bavaria

With around 12.5 million inhabitants approximately 15 percent of the German population lives in Bavaria. There are big cities and agglomerations like Munich or Nuremberg/Fürth in Bavaria, but basically Bavaria isn't densely populated. Bavaria has a strong economy, the unemployment rate amounts to a little more than 4 percent.[9]

[7] https://www.destatis.de/DE/ZahlenFakten/GesellschaftStaat/BildungForschungKultur/Schulen/Tabellen/AllgemeinBildendeBerufliche SchulenSchulartenSchueler.html and https://www.destatis.de/DE/ZahlenFakten/GesellschaftStaat/BildungForschungKultur/Schulen/Tabellen/SchuelerPrivatenSchulen.html (without Vorklassen, Kindergarten, Abendschulen, Kollegs) [09.04.2013]

[8] Statistisches Bundesamt (Ed.) (2012). Schulen auf einen Blick. Wiesbaden: Statistisches Bundesamt. 18f. https://www.destatis.de/DE/Publikationen/Thematisch/BildungForschungKultur/Schulen/BroschuereSchulenBlick0110018129004.pdf?__blob=publicationFile [09.04.2013]

[9] Statistics for March, http://www.arbeitsagentur.de [10.04.2013]

The Bavarian primary school lasts four years. Currently, Bavaria tries the concept of a flexible start into school by combining the first two class level to one basic level. The Hauptschule (lower secondary school) is more and more replaced by the Mittelschule (middle school). In the Mittelschule it is possible to take the exams for the Hauptschule (lower secondary degree) in 9th grade and the exams for the Realschule in 10th grade. In Bavaria you also find the Realschule (middle secondary school). The Gymnasium leads to the Abitur (the exam qualifying for university) in the 12th grade.[10]

In international and national competence studies like PISA, TIMSS and PIRLS (IGLU), Bavaria regularly is one of the best federal states.[11] It was one of the first states with centralized final exams in schools, and one of the last developing competence-based curricula.

Hesse

The federal state of Hesse has about 6.1 million inhabitants and you can find five big urban districts. The biggest city is Frankfurt am Main, which has about 700.000 inhabitants. Together with its urban area and the other four big cities (Darmstadt, Kassel, Offenbach am Main, Wiesbaden) more than the half of the Hessian inhabitants live there.

With 6.1 percent the unemployment rate lies beneath the German average of 7.4 percent.

The primary school in Hesse lasts four years and in general starts at the age of six. With a special application you can start school even with the age of five and the school administration decides about the school enrolment together with the preschool/kindergarten.
For secondary school, there are different types up tp 9th, 10th or 12th/13th grad possible. The lower secondary school on Hesse is called Mittelstufenschule or Hauptschule and provides exams for 9th grade. In the middle secondary school called Realschule you can make exams in 10th grade. In special types of schools called Integrative or Kooperative Gesamtschule, you can choose between exams in 9th and/or 10th grade. The Gymnasium provides exams that give you the qualification for university in 12th or 13th grade.

Schleswig-Holstein

Schleswig-Holstein has a population 2.8 million people, thus it is a relatively small German state (around 3.5 percent of the German population). In Schleswig-Holstein there are just two cities with more than 100.000 inhabitants (Kiel and Lübeck). In the south the state borders on Hamburg, this region is part of the agglomeration of Hamburg. Apart from that, Schleswig-Holstein isn't densely populated. The unemployment rate is a little above the rate for Germany.[12] The financial situation of the state is poor.

Primary schools in Schleswig-Holstein contain four grades. The first two class levels are conceptualized as basic level. Students stay in this basic level for one, two or three years. It's a flexible start into school. The Hauptschule and the Realschule have been replaced by the Regionalschule (regional school) since the school-year 2008/2009. In the Regionalschule it's possible to take the exam of the Hauptschule in 9th grade and the exam of the Realschule in 10th grade. Schleswig-Holstein has already started to replace the Regionalschule by the Gemeinschaftsschule, a comprehensive school-type for all ability levels. The Gemeinschaftsschulen exist with and without an upper secondary level. If the Gemeinschaftsschule ends with 10th grade, well-achieving students can continue school in the upper secondary level of another Gemeinschaftsschule, Gymnasium or Berufsgymnasium (a vocational upper secondary school). Thus, the Gemeinschaftsschule provides different paths to the Abitur (the qualification for attending university). [13]Regularly, in Schleswig-Holstein the Gymnasium leads to the Abitur in 8 years (G8), so in the 12th grade. But more and more schools change to the old system, when the Gymnasium contained 9 years (G9), so the exam took place in the 13th grade.

---

[10] For more information about the Bavarian educational system see Staatsinstitut für Schulqualität und Bildungsforschung München (Ed.) (2012). Bildungsbericht Bayern 2012. http://www.isb.bayern.de/download/11654/bildungsbericht_2012.pdf

[11] Compare Pisa-Konsortium: Prenzel, M. et al. (2008). PISA 2006 in Deutschland: die Kompetenzen der Jugendlichen im dritten Ländervergleich. Münster: Waxmann.

[12] Compare http://www.arbeitsagentur.de

[13] For more information about general education in Schleswig-Holstein see http://www.schleswig-holstein.de/Bildung/DE/Schulen/ AllgemeinbildendeSchulen/Allgemeinbildende_Schulen_node.html

The results of Schleswig-Holstein in international educational assessment studies like PISA, TIMSS and PIRLS (IGLU) and the national comparative assessment by the institute for quality development for education (IQB) were on or even below the German average. Independent from that, Schleswig-Holstein was one of the first federal states that included competences in their curricula.

2.1.5 Subject range

The range of compulsory subjects differs between class levels, School-types and federal states. They cannot be derived easily from the curricula, particularly because of compulsory optional subjects. In the following table the situation for Bavaria is described. There are a lot of similarities between the compulsory (and compulsory optional) subjects in Bavaria and in the other federal states.

Table 2: Compulsory (and Compulsory optional) subjects in Bavarian schools

Primary School	Mittelschule	Gymnasium
German	German	German
Mathematics	Mathematics	Mathematics
Heimat- und Sachunterricht (mixture of geography and science classes)	Biology, Chemistry or Physics	History
Foreign language	History, Social studies or Geography	Social studies
Music	English	Music or Arts
Arts	Music	Biology, Chemistry or Physics
Working with textiles/technical working	Arts	Second science class or informatics
Sports	Work, Economy or Technics	Geography or economics and law
Religion	Working with textiles/technical working*	Religion/Ethics
	Communication technics*	
	Home economics*	
	Sports	
	Religion/Ethics	

The common denominator for all states as well as school types and even class levels are the following subjects:

- German
- Mathematics
- One foreign language
- One science class
- Religion or ethics
- Arts or music
- Sports

2.2 Curricula in native language and mathematics

2.2.1 Responsibilities for the curriculum

If in Germany education is in the responsibility of the federal states, this is particularly true for the curricula of schools. Every state defines its own curricula. The ministries for education are politically responsible for the curricula. Typically, they are supported by state institutes for the quality and development of schools, e.g. the institute for quality development of schools in Schleswig-Holstein (IQSH) or the state institute for school quality and educational research Bavaria (ISB). These institutes do the operative work. They are intermediaries between the ministries on one hand and the schools and their teacher on the other hand. The institutes for quality and development of schools give information and advice to the ministries for education, they develop curricula and manuals, contribute to evaluations and exams. In addition they provide material and further training for teachers and promote the self-evaluation and quality development of schools.

The federal states are also supported by the institute for quality development in education (IQB) Berlin. The IQB was founded in 2004 and has a mandate of the standing conference of the ministers for education and cultural affairs (KMK).

Its assignment is:

- To operationalize and scale the educational standards
- To assess the achievement of educational standards and compare the federal states regularly (4th and 9th grade)
- To develop competence level models and educational standards across federal states
- To support the federal states with the implementation of the educational standards
- To develop comparative tests (Vergleichsarbeiten, *short:* VERA), that are annually conducted by the federal states in the 3rd and 8th grade

2.2.2 Educational standards and monitoring

The KMK agreed on educational standards after the unsatisfying German results in international studies like TIMSS, PISA and IGLU (PIRLS)[14]. The first educational standards passed the board in 2003. Today educational standards for different educational levels and subjects exist (compare table next page).

The concept of the educational standards has its fundaments in educational science. Educational standards are supposed to give an orientation for instruction, but also room for planning on school- and individual level. Their function is also to provide a base for the assessment and evaluation of learning results. This would provide precious information for the development of learning and instruction in schools and the improvement of the educational system.[15]

Educational monitoring is a key element of the measures, the KMK agreed upon. In addition to the regular comparison of the federal states and the annual comparative tests in the states another important element is the biennial national education report. The first national education report has been published in 2006. Each report provides essential statistics as well as information on special topics. The focus of the current education report is cultural and artistic education.[16]

Table: Educational standards for the German school-system

Educational level (school-type)	Grade	Subjects
Primary school	4th	German Mathematics
Hauptschule (lower secondary school)	9th	German Mathematics First foreign language (English/French)
Realschule (middle secondary school)	10th	German Mathematics First foreign language (English/French) Biology Chemistry Physics
Gymnasium (Abitur) (grammar school)	12th/13th	German Mathematics Continued foreign language (English/French)

Source: Kultusministerkonferenz[17], table by RMC DE

[14] TIMSS = Trends in International Mathematics and Science Study, PIRLS = Progress in International Reading Literacy Study/ IGLU = Internationale Lese-Grundschuluntersuchung, compare http://timss.bc.edu/; PISA: OECD Programme for International Student Assesment, compare http://www.oecd.org/pisa/

[15] Compare Klieme, E., et al. (2003). Zur Entwicklung nationaler Bildungsstandards. Eine Expertise. Frankfurt/Main: German Institute for International Educational Research.

[16] For the English homepage of the national education report see http://www.bildungsbericht.de/zeigen.html?seite=6609 [10.04.2013]

[17] http://www.kmk.org/index.php?id=163

The educational standards are binding for the federal states. This means, that learning and instruction in every state have to respect the standards. And this means, that the achievement of the standards will be assessed. But this does not mean that educational standards have to be implemented in the same way in every federal state.

2.2.3 Obligatory and recommended hours in the curricula in German and mathematics

A school-hour lasts 45 Minutes. On average a break of 10 minutes comes with every school hour. In general, these recreational times are not equally distributed.

Bavaria

In Bavaria the curricula for primary school as well as for lower secondary school define minimum hours per week on the subjects. Minimum hours are defined for each year of primary and secondary education. In primary school the minimum hours are also the maximum hours – at least if the children don't attend remedial lessons.

Table 3: Number of hours in native language and mathematics for the federal state of Bavaria

		Primary school				Secondary school (part I) Mittelschule / Realschule / Gymnasium					
		1	2	3	4	5	6	7	8	9	10
Minimum hours German	basic ability level (primary school, Hauptschule/Mittelschule)	7	6	6	6	5	5	5	5	4	5
	medium ability level (Realschule)					5	5	4	4	4	4
	high ability level (Gymnasium)					5	4	4	4	4	3
Minimum mum-hours Math	basic ability level (primary school, Hauptschule/Mittelschule)	5	5	5	5	5	5	5	4	5	5
	medium ability level (Realschule)					5	5	4	4	5	5
	high ability level (Gymnasium)					4	4	4	3	4	3

Source: Bavarian state institute for school quality and educational research (ISB)18, table by RMC DE

In the Bavarian curricula German and Math are the most important subjects. In primary school the minimum hours for German even exceed the minimum hours for mathematics. In secondary school the minimum hours of these subjects are on the same level. To the end of the Realschule mathematics get even more weight than German. With higher ability levels respectively in higher school tracks less hours are scheduled for German and mathematics. In the Realschule and particularly in the Gymnasium other subjects appear, e.g. classes in physics and chemistry, a second foreign language and similar.

Hesse

In Hesse the minimum hours per week on a subject is defined for each school type (primary and secondary schools) and class levels from the cultural ministry of Hesse within a regulation from September 2011. Those fixed tables of weekly hours are a base for the school conference, where it is decided about the detailed distribution of hours for the different classes and subjects.

[18] http://www.isb.bayern.de/schulartspezifisches/lehrplan/ (http://www.schule.sachsen.de/download/stundentafel_gs.pdf)

		Primary school				Secondary school (part I) Mittelschule / Realschule / Gymnasium					
		1	2	3	4	5	6	7	8	9	10
Minimum hours German	basic ability level (primary school, Hauptschule/Mittelschule)	12		10		14			12		
	medium ability level (Realschule)					14			11		
	high ability level (Gymnasium)					10		15			
Minimum mum-hours Math	basic ability level (primary school, Hauptschule/Mittelschule)	10		10		14			12		
	medium ability level (Realschule)					12			12		
	high ability level (Gymnasium)					8		16			

Source: Educational regulations for Hesse[19] [20], table by RMC DE

In primary school the weekly hours for German and Math are nearly the same and make up the half of the total hours for all subjects in those classes. A small range of hours for those two subjects can be found in the different types of secondary school. But in all types of secondary school there are nearly the same weekly hours for German and Math.

Schleswig-Holstein

In Schleswig-Holstein minimum and regular hours for the subjects aren't defined within the curricula but in additional regulations. Minimum hours are defined for broad entities of class levels. The regulations include minimum hours for primary education and minimum hours for lower secondary education. In hour contingents regular hours are defined on a smaller scale. Regular hours don't refer to combined class levels. The 1st and 2nd grade are the basic level I, the 3rd and 4th grade basic level II. Grade 5 and 6 are the orientation phase of the secondary school. The 7th to the 9th respectively 10th grade are also grouped.

[19] http://verwaltung.hessen.de/irj/HKM_Internet?rid=HKM_15/HKM_Internet/nav/597/5973019a-8cc6-1811-f3ef-ef91921321b2,d5429efb-b81f-901e-76cd-97ccf4e69f28,22222222-2222-2222-2222-222222222222,22222222-2222-2222-2222-222222222222,11111111-2222-3333-4444-100000005003.htm&uid=5973019a-8cc6-1811-f3ef-ef91921321b2

[20] http://www.leb-hessen.de/fileadmin/user_upload/downloads/Rechtliches/VO_ueber_die_Stundentafeln_f._die_Primarstufe_u._Sekundarstufe_I_Stand_05._Sept_2011_.pdf

Table 4: Number of hours in German and mathematics for the federal state of Schleswig-Holstein

		Primary school				Secondary school (part I) Mittelschule / Realschule / Gymnasium					
		1	2	3	4	5	6	7	8	9	10
Minimum hours German	basic ability level (primary school, Hauptschule/Regionalschule)	20				19					
	medium ability level (Realschule)					22					
	high ability level (Gymnasium)					22					
Regular hours German	basic ability level (primary school, Hauptschule/Regionalschule/Gemein-schaftsschule	12		12		10		12			
	medium ability level (Realschule/Regionalschule/Gemeinschaftsschule)					10		16			
	high ability level (Gymnasium)					G8 = 10 G9 = 9		G8 = 13 G9 = 16			
Minimum hours Math	basic ability level (primary school, Hauptschule/Regionalschule)	16				19					
	medium ability level (Realschule)					22					
	high ability level (Gymnasium)					22					
Regular hours Math	basic ability level (primary school, Hauptschule/Regionalschule/Gemein-schaftsschule	10		10		10		12			
	medium ability level (Realschule/Regionalschule/Gemeinschaftsschule)					10		16			
	high ability level (Gymnasium)					G8 = 10 G9 = 10		G8 = 13 G9 = 14			

Source: Educational regulations for Schleswig-Holstein[21], table by RMC DE

Most Gymnasien in Schleswig-Holstein lead to an Abitur at the end of the 12th grade. This path is called G8 (eight years in the Gymnasium). But an increasing number of schools go back to the old system, when the students achieved their Abitur at the end of the 13th grade. This path is called G9. In the first two years of secondary school the G8 students have one German hour per week more than the G9 students. From 7th to 10th grade the G8 students have three hours less. Regarding mathematics there are nearly no differences between different school types and paths to the Abitur.

The broad definition of minimum and regular hours in the curricula of Schleswig-Holstein sets a frame for learning and instruction. The schools, particularly the subject conferences in the schools, are important for breaking the regulations down to single years and a practicable and effective timetable.

2.3 Curriculum – learning objectives and content

2.3.1 Educational standards

As mentioned before, in Germany the curricula for general education are defined on state-level. But the educational standards are defined for all federal states. The standing conference of the ministers for education and cultural affairs (KMK) agreed upon several educational standards. School education in the federal states is bound to follow the educational standards. The educational standards are a system of essential competences students should achievement in defined periods of time. Regarding Ger-

[21] http://www.schleswig-holstein.de/Bildung/DE/Schulen/SchulrechtSchulgesetz/Erlasse/Downloads/Kontingentstundentafel__blob=publicationFile.pdf

man and mathematics, standards for the end of primary school (4th grade), the end of the Hauptschule (lower secondary school; 9th grade), the end of the Realschule (middle secondary school; 10th grade), and the end of the Gymnasium (grammar school; 12th resp. 13th grade) exist.

Table 5: Educational standards for the primary school, German

Area of competence	First concretization	Further concretization
Talking and Listening	- talking to others - understanding listening - ...	- oriented to standard language (talking) - ... - express understanding (listening) - ...
Writing	- having writing skills - writing correctly - ...	- having a clearly readable hand-writing (skills) - ... - using strategies for correct writing (writing correctly) - ...
Reading, Dealing with Texts and Media	- having reading skills - having reading experiences - ...	- understanding reading of age adequate texts (skills) - ... - know and distinguish narrations, lyrical and scenic texts (experiences) - ...
Language and Analysis of Language	- knowing fundamental language structures and concepts - working with words, sentences and texts - ...	- Structure words and know possibilities to form words (working) - ...

Source: KMK[22], table by RMC DE

The table of the educational standards for German in primary school shows the basic principle of the educational standards. First broad competence areas are defined. Two steps of concretization are following. The final step leads to clearly identifiable and measurable skills. In addition, the education standards contain a lot of examples for tasks and exercises the competences are necessary for. Explicit references to the competences are made. E.g. as an typical exercise to estimate the competence "understanding of non-fictional texts" a text ("Why sleeping is important") and some questions are given ("Why do children need more sleep than adults.")

Like in Austria, The theoretical fundament of these competence models is the concept of competence by Franz E. Weinert.[23] In that conceptualization competence basically means being motivated and cognitively able to solve problems flexibly and responsively.

Table 6: Educational standards for the primary school, mathematics

Generals area of competence	Concretization
Problem solving	- applying mathematical knowledge and using skills for solving problems - developing strategies for problem solving - ...
Communicating	- describing own approach - using mathematical expressions correctly - ...
Arguing	- questioning mathematical statements - recognizing mathematical connections

[22] http://www.kmk.org/fileadmin/veroeffentlichungen_beschluesse/2004/2004_10_15-Bildungsstandards-Deutsch-Primar.pdf

[23] Weinert, F. E. (2001): Concept of competence: A conceptual clarification. In D. S. Rychen & L. H. Salganik (Eds.), Defining and selecting key competencies. (pp. 45-65). Seattle, WA: Hogrefe & Huber.

Generals area of competence	Concretization
	- …
Modelling	- identifying relevant information from texts - translate realistic problems into mathematics - …
Presenting mathematics	- developing adequate presentations about mathematical problems - translating one mathematical presentations into another - …

Source: KMK[24], table by RMC DE

The educational standards for mathematics in primary school define general competences like problem solving and communicating. In addition competences that refer to contents are defined. Content areas are:

1. Numbers and operations
2. Space and form
3. Pattern and structures
4. Entities and measuring
5. Data, frequencies and probability

The educational standards for mathematics in primary school provide examples for tasks and exercises connected to the competences.

Educational standards for German in the Hauptschule and the Realschule follow the same principle as the described educational standards for primary education. The standards for German are based on the same competence areas (talking and listening, writing …), but the concretized skills are more advanced as well as the exercises and tasks are more demanding. E.g. at the end of the Realschule students should be able to formulate working hypotheses, to restructure texts and to use references in their texts.

The educational standards for mathematics in the Hauptschule and the Realschule base on similar general competence areas as the educational standards for primary education (problem solving, communicating, …). Additionally, a sixth general competence area is defined: Dealing with symbolic, formal and technical elements of mathematics. The content-oriented competences follow mathematical leading ideas. These ideas are:

1. Leading idea number
2. Leading idea measuring
3. Leading idea space and form
4. Leading idea functional connections
5. Leading idea data and chance

The leading ideas are very similar to content areas for the primary schools. Overall the educational standards are systematic and consistent within as well as between subjects.[25]

2.3.2 Curricula

In one aspect the federal states of Germany are very similar: Teachers are acting very autonomously in the classroom. Indeed, curricula and educational standards are binding for schools and their personnel, but in fact teachers experience almost no control. It's highly dependent on the principal and the culture of the single school, if the lessons of a teacher are supervised.

Bavaria

The Bavarian curricula are the fundament of learning and instruction in the Bavarian schools. Separate curricula for the different school-types exist. There are curricula for primary school, for the Mittelschule (middle school), for the Realschule (middle secondary school) and the Gymnasium (grammar school).

[24] http://www.kmk.org/fileadmin/veroeffentlichungen_beschluesse/2004/2004_10_15-Bildungsstandards-Mathe-Primar.pdf

[25] All educational standards are available on http://www.kmk.org/bildung-schule/qualitaetssicherung-in-schulen/bildungsstandards/dokumente.html

In this study we are not focussing on the curricula for special-needs schools and schools for vocational education. In the first two chapters of the curricula general goals and principles for instruction are formulated. Topics like differentiated and individualised instruction or interdisciplinary learning are just mentioned briefly in a few paragraphs.

Particularly relevant for learning and instruction are the single curricula for the subjects. They contain the learning objectives and didactical information. Until now, the educational standards haven't been consequently implemented in the curricula. Thus, teachers should actually consider the educational standards as well as the curriculum. De jure both are binding for the schools.

Hesse

Hesse tries to give opportunities to general conditions for all pupils to successfully finish school according to individual skills and likings. The concept of the planned education reform from 2011 considers lower and higher performance, reaches form pre-school up to lifelong learning and link quality improvements and validation procedures but is not passed until now.

Hesse has progressed far with implementing educational standards. In 2010, Hesse established a core curriculum that defines and concretizes competences for all school-types and nearly all subjects. These Hessian educational standards and content fields are provided for German and mathematics as well as for biology, geography, modern foreign languages, physics etc.[26] The core-curriculum respectively the educational standards and content areas elaborated for different subject, follow the logic of the educational standards from the federal level. For instance, for German in Hessian primary schools, first competence areas like "writing" are defined. On the next level, more concrete competences are described, e.g. "planning, writing and revise texts alone and in a team". These competences are even more concretized: "write fluently", "organize and structure the writing process using writing strategies" etc.

The core curriculum is very systematic, well documented and accompanied by guidelines. These guidelines even contain some concrete examples and advice for instruction. For instance, for mathematics in the $7^{th}/8^{th}$ grade an exercise for the context "squares and circles" is described in detail. Connections to different learning objectives like binominals or calculation of areas are made. Intentions for the exercise are explained. Opportunities for using the exercise are named. Possible approaches for solving the mathematical problem are given. Material for instruction is provided. These exercises are examples for working with the educational standards and content areas. They are intended to inspire the teachers.[27]

Apart from the new core curriculum, the regular curricula are set up for primary school and all different types of secondary school, whereas all curricula formulate general goals and explicit goals (sometimes as competences to reach for) for the classes. They also contain tables of weekly hours, topics and sometimes teaching methods for the subjects in different classes.

Schleswig-Holstein

As in Bavaria, in Schleswig-Holstein curricula have an important role for setting goals for learning and instruction in schools. Curricula exist for the primary school, the lower secondary level and the upper secondary level. In addition to these curricula there are curricula for special-needs education and vocational education. The curricula in Schleswig-Holstein are quite old, they were implemented in 1997. In the meantime just some curricula for new subjects like "economics and politics" or "ethics" were written. That's the fact, even though fundamental changes of the school structure in Schleswig-Holstein took place. The Hauptschule and Realschule have been replaced by the Regionalschulen, and in most of the Gymnasien the school years were reduced from 9 to 8 years until the final exam. The actualization of the curricula took place in additional documents like brochures, guidelines, and recommendations.

The rationale of the curricula in Schleswig-Holstein is to allow some autonomy. Curricula are guidelines for the teacher. Subject conferences in the single schools concretize the curricula. They make decisions on its optional content. Regularly subject conferences don't need the approval of the ministry for education or the operative institute for quality development of schools. Just with the compulsory optional subjects this approval is needed.

---

[26] http://www.iq.hessen.de/irj/IQ_Internet?cid=dc0acae7616326e11527e9084e3b1fe9

[27] http://www.iq.hessen.de/irj/IQ_Internet?cid=38d1847dbfe8a64e33e7fb3311cc6b36

2.3.3 Learning objectives

Bavaria

Even though, Bavaria hasn't used the opportunity to implement the educational standards by the KMK yet. The design of a new curriculum is complex and takes long time. But probably in 2014 a new curriculum based on the German educational standards will be established. This curriculum will be the first curriculum including all different school types from primary to upper secondary education. Its rationale is, to provide a consistent curriculum for all Bavarian schools. But even today, the learning objectives are to some extent formulated as competences. They are fully compatible with the standards, but not that systematic. And the curricula don't contain examples for tasks, exercises and questions.

Table 7: List of objectives in native language and mathematics (for the federal state of Bavaria)

class	native language	mathematics
Primary school		
4	• Conversation: talk/listen to each other, inform yourself and others, cooperation, playful language, understandable and expressive speaking • Writing: prepare and write texts, revise texts, correct writing/spelling, structuring texts, certain and familiar writing • Language: semiotic system, linguistic means, variety of language, technical terms • Reading: interest, techniques, working with different kinds of text	• Geometry: visual thinking, flats and figures, symmetry, draw figures • numbers up to 1.000.000: display, compare and order • Calculate: basic arithmetic operations, oral and written calculation with numbers up to 1.000.000, combine operations (equation) • Issue-related mathematics: measure of capacity, math text problems
Secondary school (Mittelschule class 9 / Gymnasium class 10)		
9	• understanding of the meaning of the subject as an interpersonal communication • creating and using creativity, appropriate speaking • respect/tolerate opinions • develop enjoyment of reading • getting primary education of literature, use of media • getting language awareness • strengthen correct writing and spelling • examine language in realistic speaking situations	• ability to handle mathematical problems in everyday life (use of inductive methods) • potency and roots • percentage and interest • geometric flats and figures • terms and functions • statistics
10	• Using rhetorical skills in everyday life • present results • free speech • deduct literary texts • analyze texts (in comparison) • develop argumentations • use of techniques of quotations • knowledge of basic storm and stress as well as present literature • realize reality in media	• spherical capacity and surface • trigonometric and exponential functions • exponential and logarithmical functions • stochastic: calculate probabilities in random experiments • limit of a sequence

Source: ISB28, table by RMC DE

[28] The curricula are available under http://www.isb.bayern.de/schulartspezifisches/lehrplan/

Hesse

In the curricula (and apart from the core curriculum), the formulated learning objectives for primary school include a list of main goals to be reached at the end of 4th class for the different subjects but also contain orientations for competences in total, which are not related to single subjects.

For primary and secondary schools the learning objectives are often verbalized as concrete competences and sometimes include examples for topics, questions and texts or give explicit methods for lessons.

Table 8: List of objectives in native language and mathematics (for the federal state of Hesse)

class	native language	mathematics
Primary school		
1-4	*main goals:* • flair and ability for adequate situational language • differential and creative linguistic processing of impressions, experiences and feelings • enjoyment of reading and writing • security in the required technical skills • ability for issue-related communication • getting to know a variety of literature • independent selection of literature and imaginative handling with it • insights into structures of language and writing • basic skills in spelling	*main goals:* • basic skills – compare, sort, collect data, recognize rules, generalize, find solutions, explain procedures • insight into structure of number system and basic arithmetic operations, understand elementary numerical relationships • use of numbers and sizes with use of computational advantages • identify and use geometric shapes • familiarize with basic mathematical concepts and representations
Secondary school (Hauptschule 9 / Gymnasium class 10)		
9	• correct and appropriate speaking • respect/tolerate opinions • use of basic rhetorical methods • strengthen skills in spelling • produce different types of texts • strengthen reading skills, using media as source of information • illustrate text with tables and graphs with computer programs	• percentage and interest • potency and roots • construction and classification of flats and figures • terms and linear functions
10	• make conversation: monitor and analyze conversational behavior • critical dealing with information from secondary literature and internet • correct and appropriate speaking • dealing with different kinds of literature, factual texts and media • reflection on language (identify manipulative use of language) • appropriate use of technical terms	• percentage and interest • potency and roots, potency- and root functions • exponential and logarithmical functions • capacity and surface of figures • trigonometry and trigonometric functions • stochastic: random experiments

Source: cultural ministry of Hesse[29], table by RMC DE

[29] http://verwaltung.hessen.de/irj/HKM_Internet?cid=5de39dbb9665ac4945496cbf511b2f0c

Schleswig-Holstein

Schleswig-Holstein had one of the first competence-oriented curricula. In 1997, some years before the agreement on educational standards, the learning objectives were formulated as competences, abilities, skills, actions. In the curricula the learning objectives are systemized in the way of the educational standards. Therefore the learning objectives are described in a very detailed way, by distinguishing central topics, overall basic skills and specified key skills.

For secondary schools, the categorization into objects (language, texts, contexts) and competences for each of those objects is used for systematic illustration only. The planning and performing of lessons itself use the principle of combining and integrating of the objects and competences. They overlap each other and are mutually dependent.

Table 9: List of objectives in native language and mathematics (for the federal state of Schleswig-Holstein)

class	native language	mathematics
Primary school		
1-4	*development, expansion, differentiation of:* • expression and communication skills • language awareness • aesthetic competence • historical consciousness • self-understanding of the world and themselves *central topics:* • core values • livelihoods • structural change • equality • participation *basic skills:* • Listening • Speaking • Seeing • Writing • Reading *key skills:* • build and keep relationships • participate in discussions • develop and comply with rules • respect/tolerate opinions • define/defend one's point of view • take responsibility for themselves • collaborate with others • interpret situations/issues • evaluate and recognize role behavior/ identify with and distance from roles • develop content and meaning of texts • formulate and organize thoughts • produce texts • investigate language structures • observe/discover linguistic laws and regulations	*Key skills in different areas:* *perception and concept formation* • relate senses to each other • concretize/abstract mathematical symbols • recognize and describe spatial changes • identify and describe orders for characteristics (classification) • recognize and describe courses of action *life world reference, action experience and modeling* • recognize and describe relationships • distinguish essential and unessential • develop factual problems • recognize pragmatic approaches and examine the implementation • translate reality of relationships into mathematical terms *formal thinking* • link structures (so gar not recognized) together • develop, describe and apply strategies • operate with information in mind • develop and use spatial ideas • put mathematical concepts into reality thinking

class	native language	mathematics
Primary school		
	• perceive and interpret images and characters • identify and correctly express spatial and temporal matters • experience and express aesthetic language effects • play/experiment with language, writing and media • critically use mass media	
Secondary school (Hauptschule 9 / Gymnasium 10)		
general	*basic topics:* • talking/discussion • inform • arguing • interaction • aesthetic language • text forms • literature/culture • media *competences defined for the objects language, texts, contexts (literature/culture/ media):* • expertise (knowledge, insight) • methodological skills (skills, abilities) • self-competence ((attitudes, behavior) • social skills (behavior)	*mandatory topics:* • Numbers and operations • geometry • Resolving property issues • Functions and equations • Statistics and Probability • Computer as a tool *competences:* • Expertise (knowledge, insight) • methodological skills (skills, abilities) • self-competence ((attitudes, behavior) • social skills (behavior)
9	*topics:* • form and methods of storytelling • narratives and forms of text designs • narrative perspectives • forms of conversation • aesthetic design • spelling standards • transformation of the German language • forms of mediated literature (theatre, radioplay, video, movie) • Organizations/institutions of literary and cultural life	*topics:* • percentage and interest • potency and roots • calculations of figures and bodies • terms and equations
10		*topics:* • calculations for circles • calculation of figures and bodies • trigonometry and trigonometric functions • exponential functions

Source: IQSH[30], table by RMC DE

Compared to Bavaria and Hesse, Schleswig-Holstein has a more detailed overview of topics, general learning goals, learning objectives and competences to be reached in classes of primary school and different types of secondary school. The key competences 1. expertise, 2 methodological skills, 3. self-competences, and 4. social skills are the learning dimensions for all subjects, not just German and mathematics.

[30] http://lehrplan.lernnetz.de/index.php?wahl=4

2.4 Linkage of learning objectives in pre-school and youth education

2.4.1 Pre-school and transition to primary school

In Germany, compulsory school education starts at the age of six. Before, a lot of children go to the kindergarten. The federal states provide educational plans for early childhood education. Some of these plans are extensive texts on early childhood and education, about learning environments etc. E.g. contain the educational plan more than 500 pages. It's accompanied by brochures, materials, articles etc. on the topic. On a theoretical level the so defined goals for early education are leading to the learning objectives in the curricula.[31]

In some federal state also Vorschulen. The term Vorschule (pre-school) is used both for educational efforts in Kindergärten and for a mandatory class that is usually connected to a primary school. The old type of Vorschule, meaning 'school between kindergarten and primary school', only exists rarely in Germany (for example in Hamburg). Where the pre-school and Schulkindergarten, which is a type of Vorschule, still exist, they usually are abolished and attached to the Kindergarten.

Bavaria

Already in 1972, the task of early childhood education was regulated by guidelines of the Bavarian federal state. Today, the Vorschule as mandatory class connected to primary school doesn't exist. Rather the Kindergarten shall cooperate with the primary school and the special needs school. But since 2001/2002 there are pre-courses, called "Deutsch 240", for children with special needs in coaching of German.[32] The pedagogic personnel of the kindergarten test the level of language skills of children, who have two parents with migration background, one and a half year before they leave for school. Around one year before the children leave the kindergarten, the language skills of the other children are tested, too. Standardized tests are used for this procedure.

Since 2002, in Hessen the primary school and the Kindergarten cooperate and offer pre-courses for children with migration background who need support in the linguistic development.[33] Children, whose native language is German aren't allowed to take part in such pre-courses, even if they have problems in German.[34] To discover the need of linguistic coaching, the linguistic skills of all children between 4 and 4.5 years were analysed via sheets of observations of the programme "KiSS". The courses are voluntary and start 9 months before first day at school.[35] If the level of German skills of foreign children isn't sufficient for school enrolment, they can be zurückgestellt/rückgestellt for one year. During this year they have to attend language courses and can attend pre-school.[36]

Schleswig-Holstein

The level of German skills is tested during the application for primary school. If children, with or without migration background, need linguistic coaching, they have to take part in intensified German classes ("SPRINT") for half a year before school. After the German classes the childrens level of German is evaluated again and they continue remedial German classes in school, when there is demand.[37] In Schleswig-Holstein the Kindergarten teachers also use sheets of observation, but they evaluate more aspects of child's development than only linguistic skills. In 2007 the Schulkindergärten (type of pre-school) were abolished.[38]

---

[31] Bayerisches Staatsministerium für Arbeit und Sozialordnuung, Familie und Frauen (Ed.) (2006): Der Bayerische Bildungs- und Erziehungsplan für Kinder in Tageseinrichtungen bis zur Einschulung. Berlin: Cornelsen.

[32] http://www.stmas.bayern.de/kinderbetreuung/gaerten/vorkurs.php

[33] http://verwaltung.hessen.de/irj/HKM_Internet?cid=d1e57257c6c5c51d318b9fde96fd1847

[34] http://www.bildungsserver.de/innovationsportal/bildungplus.html?artid=272

[35] http://verwaltung.hessen.de/irj/HKM_Internet?cid=d1e57257c6c5c51d318b9fde96fd1847

[36] http://www.bildungsserver.de/innovationsportal/bildungplus.html?artid=272

[37] http://www.schleswig-holstein.de/MSGFG/DE/Kindertageseinrichtungen/Sprachfoerderung/SPRINT/SPRINT_node.html

[38] http://www.gesetze-rechtsprechung.sh.juris.de/jportal/portal/t/26p2/page/bsshoprod.psml?pid=Dokumentanzeige&showdoccase=1&js_peid=Trefferliste&documentnumber=1&numberofresults=1&fromdoctodoc=yes&doc.id=jlr-SchulGSH2007rahmen&doc.part=X&doc.price=0.0#focuspoint

2.4.2 Youth education and transition from secondary school

While students of the Gymnasium regularly stay in their school until the Abitur, many students from the other secondary school-types leave school after 9th respectively 10th grade. Most of them choose vocational education and training. The curricula of the lower secondary school types consider the requirements for the work-life. The concept of basic education explicitly aims to prepare students for the life after school. But these statements stay general.[39] The transition after secondary school is picked up, but it is left to additional papers and other publications, material etc., to concretize these ideas.

2.5 Curriculum and learning objectives supporting teaching, planning, evaluation, and involvement of parents and pupils

2.5.1 Support of teachers teaching, planning and evaluation

In the German curricula regularly fundamental didactical principles are defined. And didactical suggestions for the work with subjects are given. But in the end, the information in the curricula is more like a framework for learning and instruction.

The annual comparative tests at the end of the 3rd and the end of the 8th grade (some states have also the 6th classes tested) is an instrument for the quality development in German schools. With the feedback of the results on school- and class-level reflection on learning and instruction should be initiated.[40]

2.5.2 Involving of parents and pupils

In the German curricula statements on parental involvement and student participation stay very general. No concrete concepts are given for including parents and students into the planning of classes and the instruction.

2.6 The use of IT supported teaching and digitalized learning objectives

The analysed German curricula stem from a time, when not every household – and even more schools – had a computer, not to mention internet. Nevertheless, the curricula contain at least a few goals on information technology. Some of them are very cautiously formulated. The German curriculum for secondary schools in Schleswig-Holstein says: “If it’s possible and adequate: Use the PC for writing and layout.”[41] Probably with the new curricula in Schleswig-Holstein and Bayern information technology will be more important.

[39] Compare http://lehrplan.lernnetz.de/index.php?wahl=139

[40] http://www.iqb.hu-berlin.de/vera

[41] http://lehrplan.lernnetz.de/index.php?wahl=125

Annex

Reports/Literature used:

Autorengruppe Bildungsberichterstattung (2012): Bildung in Deutschland 2012. Ein indikatorengestützter Bericht mit einer Analyse zur kulturellen Bildung im Lebenslauf. Bielefeld: wbv.

Bayerisches Staatsministerium für Arbeit und Sozialordnuung, Familie und Frauen (Ed.) (2006): Der Bayerische Bildungs- und Erziehungsplan für Kinder in Tageseinrichtungen bis zur Einschulung. Berlin: Cornelsen.

Klieme, E., et al. (2003). Zur Entwicklung nationaler Bildungsstandards. Eine Expertise. Frankfurt/Main: German Institute for International Educational Research.

Pietsch, M., Stubbe, T. C. (2007). Inequality in the transition from primary to secondary school: school choices and educational disparities in Germany. European Educational Research Journal. 6 (4), 424-445.

Pisa-Konsortium: Prenzel, M. et al. (2008). PISA 2006 in Deutschland: die Kompetenzen der Jugendlichen im dritten Ländervergleich. Münster: Waxmann.

Secretariat of the Standing Conference of the Ministers of Education and Cultural Affairs of the Länder in the Federal Republic of Germany (Ed.): The Education System in the Federal Republic of Germany 2010/2011. A description of the responsibilities, structures and developments in education policy for the exchange of information in Europe.

Senatsverwaltung für Bildung, Jugend und Wissenschaft (Ed.) (2012): Wissenschaftliche Begleitung der Pilotphase Gemeinschaftsschule Berlin. Bericht 2012.

Staatsinstitut für Schulqualität und Bildungsforschung München (Ed.) (2012). Bildungsbericht Bayern 2012

Statistisches Bundesamt (Ed.) (2012). Schulen auf einen Blick. Wiesbaden: Statistisches Bundesamt.

Weinert, F. E. (2001): Concept of competence: A conceptual clarification. In D. S. Rychen & L. H. Salganik (Eds.), Defining and selecting key competencies. (pp. 45-65). Seattle, WA: Hogrefe & Huber.

Webpages:

Lehrplan-Lernnetz
- http://lehrplan.lernnetz.de/index.php?wahl=125

Hessian administration:
- http://verwaltung.hessen.de/irj/HKM_Internet?cid=5de39dbb9665ac4945496cbf511b2f0c
- http://verwaltung.hessen.de/irj/HKM_Internet?cid=d1e57257c6c5c51d318b9fde96fd1847
- http://verwaltung.hessen.de/irj/HKM_Internet?cid=d1e57257c6c5c51d318b9fde96fd1847
- http://verwaltung.hessen.de/irj/HKM_Internet?rid=HKM_15/HKM_Internet/nav/597/5973019a-8cc6-1811-f3ef-ef91921321b2,d5429efb-b81f-901e-76cd-97ccf4e69f28,22222222-2222-2222-2222-222222222222,22222222-2222-2222-2222-222222222222,11111111-2222-3333-4444-100000005003.htm&uid=5973019a-8cc6-1811-f3ef-ef91921321b2

Agency for employment (Arbeitsagentur):
- http://www.arbeitsagentur.de

German educational report:
- http://www.bildungsbericht.de/zeigen.html?seite=6609

Server for education:
- http://www.bildungsserver.de/innovationsportal/bildungplus.html?artid=272

All-day schools:

- http://www.ganztagsschulen.org/de/868.php.

Information about laws:

- http://www.gesetze-rechtsprechung.sh.juris.de/jportal/portal/t/26p2/page/bsshoprod.psml?pid=Dokumentanzeige&showdoccas e=1&js_peid=Trefferliste&documentnumber=1&numberofresults=1&fromdoctodoc =yes&doc.id=jlr-SchulGSH2007rahmen&doc.part =X&doc.price=0.0#focuspoint

Institute for Quality of Education (IQB):

- http://www.iqb.hu-berlin.de/vera

Bavarian State-Institute for Quality development of schools and educational research Munich:

- http://www.isb.bayern.de/schulartspezifisches/lehrplan/

Schools in Saxonia:

- (http://www.schule.sachsen.de/download/stundentafel_gs.pdf)

Standing Conference of the Ministers of Education and Cultural Affairs of the Länder in the Federal Republic of Germany:

- http://www.kmk.org/bildung-schule/qualitaetssicherung-in-schulen/bildungsstandards/ dokumente.html
- http://www.kmk.org/fileadmin/doc/Dokumentation/Bildungswesen_en_pdfs/en-2012.pdf
- http://www.kmk.org/fileadmin/veroeffentlichungen_beschluesse/2004/2004_10_15-Bildungsstandards-Deutsch-Primar.pdf
- http://www.kmk.org/fileadmin/veroeffentlichungen_beschluesse/2004/2004_10_15-Bildungsstandards-Mathe-Primar.pdf
- http://www.kmk.org/index.php?id=163

Leb-Hessen

- http://www.leb-hessen.de/fileadmin/user_upload/downloads/Rechtliches/ VO_ueber_die_Stundentafeln _f._die_Primarstufe_u._Sekundarstufe_I_Stand_05._Sept_2011_.pdf

Schleswig-Holstein:

- http://www.schleswig-holstein.de/Bildung/DE/Schulen/ AllgemeinbildendeSchulen/Allgemeinbildende_Schulen_node.html
- http://www.schleswig-holstein.de/Bildung/DE/Schulen/SchulrechtSchulgesetz/Erlasse/Downloads/ Kontingentstundentafel__blob =publicationFile.pdf
- http://www.schleswig-holstein.de/MSGFG/DE/Kindertageseinrichtungen/Sprachfoerderung/ SPRINT/SPRINT_node.html
- http://www.schleswig-holstein.de/MSGFG/DE/Kindertageseinrichtungen/Sprachfoerderung/ SPRINT/SPRINT_node.html

Bavaria:

- http://www.stmas.bayern.de/kinderbetreuung/gaerten/vorkurs.php

Federal agency for statistics (Statistisches Bundesamt):

- https://www.destatis.de/DE/ZahlenFakten/GesellschaftStaat/BildungForschungKultur/Schulen/Tabellen/AllgemeinBildendeBerufliche SchulenSchulartenSchueler.html and https://www.destatis.de/DE/ZahlenFakten/GesellschaftStaat/BildungForschungKultur/Schulen/ Tabellen/SchuelerPrivatenSchulen.html

Persons interviewed:

Sabine Dörnhaus
Christian Fischer
Thomas Sachsenröder
Claudia Urban

Appendix

(Colours indicate level)

Units	Elements	Characteristics	Compulsory
Educational standards			Yes
Competencies	In Hauptschule (lowest track) and Gymnasium (highest track): • German • Mathematics • English • French Additionally in Realschule (middle track): • Biology • Chemistry • Physics	Competencies	Yes
Competence levels	• Hauptschule (9th grade) = basic general education • Realschule (10th grade) = advanced general education • Gymnasium (12th/13th grade) = extended general education	Competency level	Yes
Curricula			
Subjects	Common denominator for all federal states and school types: • German • Mathematics • One foreign language • One science class • Religion or ethics • Arts or music • Sports Additional subjects dependent on federal state and school-type	Content based (though partly competence-oriented formulated)	Yes
Learning levels	Definition of learning objectives for every class level in the different school-types	Descriptive	Yes

3. CANADA, ONTARIO

This country report contains a systematic review and description of Ontario's primary and lower secondary school in relation to curricula in language and mathematics. The country report includes course range and curriculum, as well as descriptions on the rationale of the model of Ontario, including types of learning objectives, types of content requirements, and how learning objectives are used in teaching and in involving of parents and pupils[1].

This report is based on desk research on legislation and regulation, existing reports and research that has formed the basis for designing the curriculum model applied by Ontario. Further, Ramboll has conducted selected interviews with the following resource persons: Christine Suurtamm in Faculty of Education, University of Ottawa and Douglas McDougall and Clair Kosnik, both in Department of Curriculum, Teaching, and Learning at OISE/University of Toronto. Ramboll has also interview a representative from the Ontario Ministry of Education and a professor who preferred to be anonymous. The interviews should both provide us with factual information, the respondents view on positive as well as negative experiences and relevant literature to be read.

The approach of our work is mainly descriptive. It is therefore not an evaluation or an impact analysis of the work with subjects and curriculum in each country, unless it is explicitly mentioned by reference to existing documentation or research.

Ramboll uses the report to synthesize across the countries studied to the client, Danish Ministry of Children and Education.

3.1 Characteristics of the education system and steering model

3.1.1 Description of the elementary and secondary school

In Ontario education is compulsory for 12 years, from the age of six until the age of 18. If a person is five years old at the day in September when the school starts a certain year and the person attains the age of six later that year, he or she will start school in September the next succeeding year[2].

The mandatory education is divided in two parts, elementary school from 1st to 8th grade and secondary school (also known as high school) from 9th to 12th grade[3].

In Ontario, education is delivered by 4 publicly funded school systems: English Public, English Catholic, French Public and French Catholic. About 4 percent of the pupils go to French-language schools. Assessment and evaluation requirements and graduation requirements are the same for students in both English- and French-language school systems. The curriculum in the public and catholic school systems is the same, however, there are particular additional graduation requirements for students in the catholic system related to religious instruction.

Division into qualification levels

Up to grade 8 there is no division of pupils into qualification levels. At secondary school students choose a type and destination of course depending on their goals. The courses students choose in grade 9 will affect their options in the future. Some lead to community college, some to university and some to apprenticeship or directly to work[4]. Course selection for students under the age of eighteen must be made with parental approval, except in the case of sixteen- or seventeen-year-old students who have withdrawn from parental control[5].

---

[1] Canada is bilingual but the subject for this study is the English language curriculum. "Language" and"English language" will in this report be used as synonyms, partly because the curriculum for English grade 1-8 is named Language curriculum.

[2] Kindergarten classes are also included in Elementary school but those classes are not mandatory. Most of the children in Ontario go to Kindergarten.

[3] http://www.e-laws.gov.on.ca/html/statutes/english/elaws_statutes_90e02_e.htm#s170p2s1

[4] http://www.welcomepeterborough.ca/Learning/Elementary_and_Secondary_School.htm

[5] http://www.edu.gov.on.ca/eng/document/policy/os/ONSchools.pdf

The following three types of courses are offered in Grades 9 and 10:

Academic courses develop students' knowledge and skills through the study of theory and abstract problems. These courses focus on the essential concepts of a subject and explore related concepts as well. They incorporate practical applications as appropriate.
Applied courses focus on the essential concepts of a subject and develop students' knowledge and skills through practical applications and concrete examples. Familiar situations are used to illustrate ideas, and students are given more opportunities to experience hands-on applications of the concepts and theories they study.
Open courses, which comprise a set of expectations that are appropriate for all students, are designed to broaden students' knowledge and skills in subjects that reflect their interests and prepare them for active and rewarding participation in society. They are not designed with the specific requirements of university, college, or the workplace in mind.

In Grades 9 and 10, students will select an appropriate combination of academic, applied, and open courses in order to add to their knowledge and skills, explore their interests, and determine the type of educational program they are best suited to undertake in Grades 11 and 12. When selecting their courses in Grades 9 and 10, students are not expected to make binding decisions about a particular educational or career pathway; however, they should try to ensure that they have the prerequisites required for future courses they plan to take.

In Grades 11 and 12 five types of courses are offered: College preparation, University preparation, University/college preparation, Workplace preparation and Open courses. In grades 11 and 12 there are also increased opportunities for learning experiences beyond the school, including cooperative education, work experience, and specialized programs such as the Ontario Youth Apprenticeship Program, Specialist High Skills Major programs, and school-work transition programs[6].

Courses in Grades 10, 11, and 12 may have prerequisites for enrolment. All prerequisite courses are identified in ministry curriculum policy documents and schools must provide parents and students with clear and accurate information about prerequisites. In some circumstances, students may change from one type of course to another. To do so, they may have to repeat a subject (e.g. a student who completed grade 9 Applied English or mathematics may have to take grade 9 Academic math)[7]. In the case of mathematics it is required that a student take an on-line or summer school transfer course.

Subject range

In English-language elementary schools, learning programs must include the following disciplines:

- The Arts
- French As a Second Language
- Health and Physical Education
- Language
- Mathematics
- Science and Technology
- Social Studies, History and Geography

Schools may also offer the following experiential learning programs for students in Grades 7 and 8: job shadowing and job twinning[8]. Native languages, the counterpart to *modermålsundervisning* in Denmark, may be offered in a school where parents request[9].

The course range in secondary school includes the following disciplines:

- The Arts
- Business Studies
- Canadian and World Studies
- Classical and International Languages

[6] http://www.edu.gov.on.ca/eng/document/policy/os/ONSchools.pdf

[7] http://www.welcomepeterborough.ca/Learning/Elementary_and_Secondary_School.htm

[8] http://www.edu.gov.on.ca/eng/document/policy/os/ONSchools.pdf

[9] http://www.edu.gov.on.ca/eng/curriculum/elementary/nativelang18curr.pdf

- Computer Studies
- English
- English As a Second Language and English Literacy Development
- French As a Second Language
- Guidance and Career Education
- Health and Physical Education
- Interdisciplinary Studies
- Mathematics
- Native Languages
- Native Studies
- Science
- Social Sciences and Humanities
- Technological Education

The requirements for the graduation diploma, The Ontario Secondary School Diploma (OSSD), are:

- 30 credits from 30 courses in secondary school, 18 compulsory courses and 12 optional courses. The compulsory credits are
  - 4 credits in English (1 credit per grade)
  - 3 credits in mathematics (1 credit in Grade 11 or 12)
  - 2 credits in science
  - 1 credit in Canadian history
  - 1 credit in Canadian geography
  - 1 credit in the arts
  - 1 credit in health and physical education
  - 1 credit in French as a second language
  - 0.5 credit in career studies
  - 0.5 credit in civics
- 40 hours of community involvement
- completion of the literacy requirement[10]

The requirements for the graduation diploma are further described in detail in Appendix 1.

The course range is wide, disadvantages that are brought up by interview persons are less possibility for the student to focus on specific subject, like Mathematics and English language, but on the other hand is each course valuable and needed. The advantage mentioned of this wide selection is that it allows all students to explore a variety of learning styles and opportunities.

Locally developed courses

Locally developed courses are courses that may be developed by a board for students in a particular school or region to accommodate educational and/or career preparation needs that are not met through courses within the provincial curriculum policy documents. Such courses require the approval of the ministry, with the exception of religious education courses developed by Roman Catholic school boards.

Boards may develop courses locally that can be counted as optional credits in Grades 9 to 12 in any discipline.

Boards may develop locally and offer one Grade 9 course in English, in mathematics, in science, and in French as a second language, and one Grade 10 course in English, in mathematics, in science, and in Canadian history that can be counted as a compulsory credit in that discipline. A student may count no more than seven such locally developed courses as compulsory credits. Students who successfully complete eight locally developed compulsory credit courses may count the eighth course as an optional credit.

Seven locally developed compulsory credit courses have been approved by the ministry for use by school boards across the province: Grades 9 and 10 English, Grades 9 and 10 mathematics, Grades 9

[10] http://www.tdsb.on.ca/_site/viewitem.asp?siteid=126&menuid=498&pageid=387

and 10 science, and Grade 10 Canadian history. These courses are identified in the prerequisite charts of the curriculum policy documents, and the courses to which they might lead are also specified in those charts. Boards wishing to offer these courses must still go through the approval process but the process will be expedited for these specific courses.

Locally developed compulsory credit courses may be used only to meet the compulsory credit requirements that they have been designed to meet; they may not be used as substitutions for courses that meet any other compulsory credit requirements.

If universities, colleges, and/or employers recognize a board's Grade 11 or 12 locally developed course for admission purposes, this information must be stated clearly in the board's program and course calendar. It must also be made clear to students that some postsecondary institutions or employers may not recognize a locally developed course.

The policy for locally developed courses also applies to inspected private schools.[11]

Number of schools and average school size

In 2010-2011 there were 4,004 elementary and 909 secondary schools in Ontario[12]. In 2009-20010 there were 877 private schools in Ontario, 486 of them were elementary schools, 179 of them were secondary schools and 212 were combined schools that offer both elementary and secondary education[13]. The number of classes in every school varies a lot. How many classes there should be in every school is decided on district/school board level. The average school size for elementary schools is 318 pupils, and for secondary schools 794[14].

Class sizes

The class sizes are regulated on provincial level.

[11] http://www.edu.gov.on.ca/eng/document/policy/os/ONSchools.pdf

[12] http://www.edu.gov.on.ca/eng/educationFacts.html

[13] http://www.edu.gov.on.ca/eng/general/elemsec/quickfacts/2010-11/quickFacts10_11.pdf

[14] http://www.peopleforeducation.ca/wp-content/uploads/2012/05/declining-enrolment-early-release-2012.pdf

Division or grade	Restriction
Primary division –Junior kindergarten[15] to grade 3	Shall have 23 or fewer pupils. In each school year, at least 90 per cent of the classes described in section 4 shall have 20 or fewer pupils.
Grades 4-8	The average class size in every board shall not exceed 24, 5 (36 boards have other limits, though regulated on provincial level. Concerning those boards the regulated average maximum class sizes do vary between 18, 5 and 25, 7.)
Elementary school classes – mixed grades	If a class includes one or more pupils enrolled in the primary division and one or more pupils enrolled in grade 4, 5, 6, 7 or 8, the class shall have 23 or fewer pupils.
Secondary school	The average size in each school year of a board's secondary school classes shall not exceed 22[16]

3.1.2 Description of steering model for the school system

Provincial level

Education is a provincial government responsibility in Canada. In Ontario education is governed principally by the *Education Act* and its regulations. The Education Act and its regulations set out duties and responsibilities of the Minister of Education and the duties and responsibilities of school boards, school board supervisory officers, principals, teachers, parents and students.

The Minister of Education represents the interests of the ministry at the provincial cabinet and assists in the development of education policy. With the assistance of the Ministry of Education, the Minister also administers the provincial statutes and regulations that concern education including those that set the length of the school year and allocate funds to school boards using the education funding model.

The Minister of Education is also responsible for

- Developing curriculum;
- Setting policies and guidelines for school trustees, directors of education, principals and other school board officials;
- Setting requirements for student diplomas and certificates; and
- Preparing lists of approved textbooks and other learning materials[17].

The main steering documents for Ontario education are developed on provincial level by the Ministry of Education. The most important steering documents are:

- Education Act
- *Curriculum for each school subject*
- *Ontario Schools, Kindergarten to grade 12 – Policy and Program Requirements*
- *Growing Success: Assessment, Evaluation, and Reporting In Ontario Schools - Covering Grades 1 to 12.*

District level

Ontario's school boards[18] operate the province's publicly-funded schools. Local representatives, called trustees, are elected to the boards during municipal elections. Trustees represent the interests of parents and the general public.

[16] http://www.e-laws.gov.on.ca/html/source/regs/english/2012/elaws_src_regs_r12132_e.htm

[17] http://www.edu.gov.on.ca/eng/document/brochure/whosresp.html#minister

[18] Ontario's 72 District School Boards are made up of 31 English-language public boards, 29 English-language Catholic boards, 4 French-language public boards, and 8 French-language Catholic boards. As well, a small number of Ontario schools are operated by School Authorities. The School Authorities manage special types of schools, such as schools in hospitals and treatment facilities, and schools in remote and sparsely-populated regions.

The boards administer the funding they receive from the province for their schools. School boards must make sure that all the students under their jurisdiction have access to a quality education and that the Ministry of Education's policies are respected. According to this the school boards have the responsibility to e.g.:

- provide education programs that meet the needs of the school community, including needs for special education;
- supervise the operation of schools and their teaching programs;
- establish a school council at each school;
- determine the number, size and location of schools
- hire teachers and other staff;
- help teachers improve their teaching practices;
- ensure schools abide by the *Education Act* and its regulations[19].

Local level

Principals are responsible for the organization and management of individual schools, including any budget assigned to the school by the school board. They are also responsible for the quality of instruction at their school and for student discipline[20].

Recent change and the rationale behind

In 2003 Premier Dalton McGuinty initiated the so called *Ontario strategy*. According to the area of focus for the two major initiatives in the strategy, what partly triggered the strategy was

- Low average pass rates in reading, mathematics in provincial exams
- Low high school graduation rates

The Ontario strategy has achieved widespread positive results in increasing elementary literacy and numeracy, improving graduation rates, and reducing the number of low-performing schools.

There were two major initiatives pursued by the Ontario Ministry of Education:

- The Literacy and Numeracy initiative: to increase reading and mathematics outcomes in elementary schools. Through a deep capacity-building strategy, this initiative has succeeded in raising the average pass rate in provincial exams from roughly 55% (2003) to roughly 70% (2010) in reading, mathematics and writing in grade 3. Similar gains of about 10-12 percentage points are apparent in the same subjects in grade six.

- The Student Success initiative: to increase the high school graduation rate to 85%. The background to this program was that the road to dropping out of high school starts early; by tracking students who have failed one or more courses in 9th grade, it is possible to identify potential dropouts early. By funding a "student success officer" in each school, and creating programmes of "credit recovery" through which students could make up the parts of courses that they failed, the graduation rate has increased from 68% to 79%.

The characteristics for the Ontario strategy were:

- Strategies directly focused on improving the act of teaching.
- Careful and detailed attention to implementation, along with opportunities for teachers to practice new ideas and learn from their colleagues.
- A single integrated strategy and one set of expectations for both teachers and students.
- Support from teachers for the reforms. Both province and district policies would need to be crafted with all of these goals in mind[21].

A part of the responsibility for teacher development and implementation was moved from the school boards to the province level. Also the number of school boards has been decreased. The rationale behind those two changes was according to interview persons (from the academic area) to achieve great-

[19] http://www.edu.gov.on.ca/eng/document/brochure/whosresp.html#minister

[20] Ibid.

[21] http://www.oecd.org/pisa/pisaproducts/46580959.pdf

er constancy – before the changes there were many small school districts with small budgets and therefore no possibility to invest in for example teacher development. Some interview persons criticize that a part of the responsibility for implementation has been moved from teachers to bureaucrats.

Regulation on division of classes into stages

The division of classes into stages is regulated on provincial level by the ministry. But there is, according to the Education Act, a local room for dividing classes into stages. In some schools, it may not be feasible to offer separate classes for every grade in elementary schools, or all course grades and/or types in secondary schools. In such cases, a single class may be organized to serve more than one group of students across grades or course types.[22]

How to divide pupils into qualification levels are decided on provincial level, see 2.1.

3.2 Curriculum – Content and learning objectives

The curriculum in Ontario is the mandatory knowledge and skills that every student must attain for graduation[23]. The curriculum document identifies the expectations for each grade and describes the knowledge and skills that students are expected to acquire, demonstrate, and apply in their class work and investigations, on tests, and in various other activities on which their achievement is assessed and evaluated. There are curriculums for each individual subject in elementary and secondary school. The curriculum policy document also include description of principles underlying the curriculum for the specific subject, guidelines for program planning and guidelines and standards for evaluation, assessment etc.

There is a section about cross-curricular learning in every curriculum, teachers should ensure that all students have ample opportunities to explore a subject from multiple perspectives by emphasizing cross-curricular learning.

For an explicit model describing the relation between the curriculum documents. learning objectives and standards see Table 1.

Table 1 - The relation between the curriculum documents and the standards

Colours indicate level.

Units	Elements	Characteristics	Compulsory
Curriculum Area (Elementary school)	- The Arts - French As a Second Language - Health and Physical Education - Language - Mathematics - Native Languages - Science and Technology - Social Studies, History and Geography	Curriculum areas	Yes (not Native Languages[24])
Curriculum Area (Secondary school)	- The Arts - Business Studies - Canadian and World Studies - Classical and International Languages - Computer Studies - English - English As a Second Language	Curriculum areas	30 courses/credits are compulsory, see 2.1

[22] http://www.e-laws.gov.on.ca/html/statutes/english/elaws_statutes_90e02_e.htm#s170p2s1

[23] Private elementary schools are not obliged to use the Ontario curriculum. Private Secondary Schools that do not offer credits towards the Ontario Secondary School Diploma (the OSSD) are not obliged to use the Ontario curriculum. (http://www.edu.gov.on.ca/eng/general/elemsec/privsch/)

[24] In Ontario Native Languages is the counterpart to *modersmålsundervisning* in Denmark

Units	Elements	Characteristics	Compulsory
	and English Literacy Development - French As a Second Language - Guidance and Career Education - Health and Physical Education - Interdisciplinary Studies - Mathematics - Native Languages - Native Studies - Program Planning and Assessment - Science - Social Sciences and Humanities - Technological Education		
Overall expectations	Depending on the subject.	Content standards: Describe in general terms the knowledge and skills students are expected to demonstrate in the end of each course. Overall expectations are specified for every strand in every subject.	Yes
Process expectations (Only for Mathematics)	- Problem Solving - Reasoning and Proving - Reflecting - Selecting Tools and Computational Strategies - Connecting - Representing - Communicating	The mathematical process expectations are to be integrated into student learning associated with all the strands.	Yes
Specific expectations	Depending on the subject.	Content standards: Explain the overall expectations in greater detail. The specific expectations reflect this progression in knowledge and skills from grade to grade through (1) the wording of the expectation itself, (2) the examples that are given in parentheses in the expectation, and/or (3) the teacher prompts that may follow the expectation.	Yes
Standard province-wide guide – Achievement Charts	Elements of learning in every subject, focused on -Knowledge and Understanding -Thinking -Communication -Application	Performance standards: A common framework that encompasses all curriculum expectations for all subjects/courses across grades	Yes

The English language curriculum

There are three main curriculum documents for English language:

- Language Elementary school 1st-8th grade
- English Secondary school 9th-10th grade
- English Secondary school 11th-12th grade

The knowledge and skills that students need to become literate are in the curriculum organized in four strands, or broad areas of learning –

- Oral
- Communication
- Reading
- Writing
- Media Literacy

Media Literacy was added as a strand to the curriculum in 2006). These areas of learning are seen as closely interrelated and the teachers are expected to plan activities that blend expectations from the four strands in order to provide students with the kinds of experiences that promote meaningful learning and that help students recognize how literacy skills in the four areas reinforce and strengthen one another.

In this study different perceptions of the English language curriculum have appeared, they will be described later on in this chapter.

The Mathematics curriculum

The three main curriculum documents for Mathematics are:

- Mathematics Elementary school 1st-8th grade
- Mathematics Secondary school 9th-10th grade (Mathematics 9th Grade Transfer Course Applied to Academic)
- Mathematics Secondary school 11th-12th grade

Overall and specific expectations in mathematics are organized into five strands, which are the five major areas of knowledge and skills in the mathematics curriculum. The program in all grades is designed to ensure that students build a solid foundation in mathematics by connecting and applying mathematical concepts in a variety of ways. To support this process, teachers will, whenever possible, integrate concepts from across the five strands and apply the mathematics to real-life situations. The five strands are

- Number Sense and Numeration
- Measurement, Geometry and Spatial Sense
- Patterning and Algebra
- Data Management
- Probability

In the latest revision of the mathematic curricula the attention to the processes that support effective learning of mathematics was stressed and considered to be essential to a balanced mathematics program. Seven mathematical processes are identified in curriculum document: *problem solving, reasoning and proving, reflecting, selecting tools and computational strategies, connecting, representing, and communicating*. The curriculum for each grade outlined in this document includes a set of "mathematical process expectations" that describe the practices students need to learn and apply in all areas of their study of mathematics. The mathematical process expectations are to be integrated into student learning associated with all the strands[25].

3.2.1 Curriculum in English language and mathematics

In this section curriculum in English language and mathematics are described, including course range, minimum number of hours, at which school years and levels of pupil competence (for more information on competence level, see section 2).

[25] http://www.edu.gov.on.ca/eng/curriculum/elementary/math18curr.pdf

Elementary school 1st-8th Grade
Students study language and mathematics in each grade but there are no minimum hours for each subject. The only regulation is the compulsory and intended instruction time regulated in the Education Act: 5 hours of instruction multiplied by 188 instructional days per year. The schools have to deliver a certain amount of instructional hours but there is no regulation concerning how to allocate the hours between the subjects every year.

There are learning objectives for each grade but no specific courses. There are no divisions into qualification levels.

Subject	1st grade	2nd grade	3rd grade	4th grade	5th grade	6th grade	7th grade	8th grade
Language	X	X	X	X	X	X	X	X
Mathematics	X	X	X	X	X	X	X	X

Secondary school 9th-12th Grade
In Ontario students choose between three types of courses in Grades 9 and 10: Academic, Applied and Open. But in grades 9 and 10 mathematics and English language there are no open courses except the English course Literacy Skills: Reading and Writing, Grade 10, see the chart below. In grade 11 and 12 students choose between five types of courses: College preparation, University preparation, University/college preparation, Workplace preparation and Open. The different types of courses are described in section 2. All courses are minimum 110 hours[26].

English language course range Secondary School

	9th grade	**10th grade**	**11 grade**	**12th**
Compulsory	1 course English grade 9 Academic or Applied	1 course English grade 10 Academic or Applied	1 course English grade 11 University/College or Workplace	1 course English grade 12 University/College or Workplace
Optional		Literacy Skills: Reading and Writing, Grade 10	• Canadian Literature, Grade 11, University/College Preparation • Media Studies, Grade 11, Open • Presentation and Speaking Skills, Grade 11	• Studies in Literature, Grade 12, University Preparation • The Writer's Craft, Grade 12, University Preparation • Studies in Literature, Grade 12, College Preparation (ETS4C) • The Writer's Craft, Grade 12, College Preparation • Business and Technological Communication, Grade 12 • Ontario Secondary School Literacy Course, Grade 12

[26] http://www.edu.gov.on.ca/eng/document/policy/os/ONSchools.pdf

Mathematics course range Secondary School

	9th grade	10th grade	11th grade	12th grade
Compulsory	• Principles of Mathematics, Grade 9, Academic or • Foundations of Mathematics, Grade 9, Applied	• Principles of Mathematics, Grade 10,Academic or • Foundations of Mathematics, Grade 10, Applied	*	*
Transfer (for students who want to change from Applied to Academic)	Foundations of Mathematics, Grade 10, Applied to Academic	Foundations of Mathematics, Grade 10,Applied to Academic		
Optional			• Functions, University Preparation • Functions and Applications, University/College Preparation • Foundations for College Mathematics, College Preparation • Mathematics for Work and Everyday Life, Workplace Preparation	• Advanced Functions, University Preparation • Calculus and Vectors, University Preparation • Mathematics of Data Management, University Preparation • Mathematics for College Technology, College Preparation • Foundations for College Mathematics, College Preparation • Mathematics for Work and Everyday Life, Workplace Preparation

* 1 credit in either Grade 11 or 12 is compulsory, the student need 3 credits in mathematics to graduate, see more information in Appendix 1.

3.2.2 Learning objectives

The role of standards in the Ontario curriculum

Relation between standards in curricula

Curriculum	
Performance standards	**Content standards = Learning objectives**
Achievement chart	Overall expectations (also process expectations for Mathematics)
	Specific expectations

This is a model of the relation between standards in the curricula, a useful illustration when reading this section about learning objectives. For a more explicit model describing the relation between the curriculum documents and the standards see Table 1.

The role of standards in the curriculum

The curriculum describe the knowledge and skills students are expected to develop and demonstrate in their class work, on tests, and in various other activities on which their achievement is assessed and evaluated. The role of standards is central in the Ontario curriculum and in every curriculum for every subject there are two types of standards:

- *Content standards and*
- *Performance standards*

Standards are statements of required results whose meaning is made clear by performance indicators. These indicators are descriptions of what achievement actually looks like.

The content standards are the curriculum expectations/learning objectives - the *overall expectations* and the *specific expectations*, described in the next section about learning objectives - identified for every subject and discipline[27].

The *performance standards* are outlined in an achievement chart that appears in the elementary and secondary curriculum document for every subject or discipline. The achievement chart for each subject/discipline is a standard province-wide guide and is to be used by all teachers as a framework within which to assess and evaluate student achievement of the expectations in the particular subject or discipline. It enables teachers to make consistent judgment about the quality of student learning based on performance standards and on a body of evidence collected over time.

The purposes of the achievement chart are to:

- provide a common framework that encompasses all curriculum expectations for all subjects/courses across grades;
- guide the development of high-quality assessment tasks and tools (including rubrics);
- help teachers to plan instruction for learning;
- provide a basis for consistent and meaningful feedback to students in relation to provincial content and performance standards;
- establish categories and criteria with which to assess and evaluate students' learning[28].

Assessment and evaluation will be based on both the content standards and the performance standards.

Here below is an example of performance standards from the achievement chart in the mathematics curriculum for elementary school. The achievement charts in the curriculum provide a standard approach to key elements of learning in every subject, focused on Knowledge and Understanding, Thinking, Communication and Application.

[27] http://www.edu.gov.on.ca/eng/policyfunding/growsuccess.pdf

[28] Ibid.

Categories	Level 1	Level 2	Level 3	Level 4
Communication Expression and organization of ideas and mathematical thinking (e.g., clarity of expression, logical organization), using oral, visual, and written forms (e.g., pictorial, graphic, dynamic, numeric, algebraic forms; concrete materials)	expresses and organizes mathematical thinking with limited effectiveness	expresses and organizes mathematical thinking with some effectiveness	expresses and organizes mathematical thinking with considerable effectiveness	expresses and organizes mathematical thinking with a high degree of effectiveness

There are examples of content standards (overall expectations and specific expectations) in the following section.

Two sets of learning objectives/expectations
Distinctive for the curriculum are specific competence-based learning objectives. The competence-based learning objectives are expectations of what the student should learn.

As mentioned above, two sets of learning objectives/expectations are listed for each grade in each strand in mathematics and English language, and the structure for the learning objectives is the same from 1st to 12th grade:

- **Overall expectations** – describe in general terms the knowledge and skills students are expected to demonstrate in the end of each course.
- **Specific expectations** – explain the overall expectations in greater detail.

The specific expectations reflect this progression in knowledge and skills from grade to grade through (1) the wording of the expectation itself, (2) the examples that are given in parentheses in the expectation, and/or (3) the teacher prompts that may follow the expectation.

The examples and teacher prompts help to clarify the requirements specified in the expectations and suggest the intended depth and level of complexity of the expectations. They are meant to serve as illustrations for teachers. Teachers can choose to use the examples and teacher prompts that are appropriate for their classrooms or they may develop their own approaches that reflect a similar level of complexity[29].

Here below the learning objective structures for the subjects Mathematics and English language will be described separately, including illustrating examples.

Mathematics
The specific expectations are grouped under subheadings that reflect particular aspects of the required knowledge and skills and that may serve as a guide for teachers as they plan learning activities for their students. The organization of expectations in subgroups is not meant to imply that the expectations in any one group are achieved independently of the expectations in the other groups. The subheadings are used merely to help teachers focus on particular aspects of knowledge and skills as they develop and present various lessons and learning activities for their students[30].

In addition to the expectations outlined within each strand, a list of seven "mathematical process expectations" precedes the strands in each grade. These specific expectations describe the key processes essential to the effective study of mathematics, which students need to learn and apply throughout the year, regardless of the strand being studied. Teachers should ensure that students develop their ability to apply these processes in appropriate ways as they work towards meeting the expectations outlined in all the strands[31].

[29] http://www.edu.gov.on.ca/eng/curriculum/elementary/language18currb.pdf
[30] http://www.edu.gov.on.ca/eng/curriculum/elementary/math18curr.pdf
[31] Ibid.

Illustrating example of overall expectations and specific expectations from Grade 1, strand Number Sense and Numeration:

Overall expectations By the end of Grade 1, students will:
• Read, represent, compare, and order whole numbers to 50, and use concrete materials to investigate fractions and money amounts; • Demonstrate an understanding of magnitude by counting forward to 100 and backwards from 20; • Solve problems involving the addition and subtraction of single-digit whole numbers, using a variety of strategies.

Specific expectations (The specific expectations for strand Number Sense and Numeration are divided into three categories – Quantify Relationships, Counting and Operational Sense – here below are the specific expectations from category Operational Sence) By the end of Grade 1, students will:
• Solve a variety of problems involving the addition and subtraction of whole numbers to 20, using concrete materials and drawings (e.g., pictures, number lines) (Sample problem: Miguel has 12 cookies. Seven cookies are chocolate. Use counters to determine how many cookies are not chocolate.); • Solve problems involving the addition and subtraction of single-digit whole numbers, using a variety of mental strategies (e.g., one more than, one less than, counting on, counting back, doubles); • Add and subtract money amounts to 10¢, using coin manipulatives and drawings.

English Language

In the language curriculum, the overall expectations outline standard sets of knowledge and skills required for effective listening and speaking, reading and writing, and viewing and representing. They encompass the types of understanding, skills, approaches, and processes that are applied by effective communicators of all ages and levels of development, and are therefore described in constant terms from grade to grade. The language curriculum focuses on developing the depth and level of sophistication of students' knowledge and skills associated with each of these key overall expectations by increasing the complexity of the texts they work with and the tasks they perform over time[32].

Illustrating example of overall expectations and specific expectations from Grade 1, strand Oral communication:

Overall expectations By the end of Grade 1, students will:
1. Listen in order to understand and respond appropriately in a variety of situations for a variety of purposes; **2.** Use speaking skills and strategies appropriately to communicate with different audiences for a variety of purposes; **3.** Reflect on and identify their strengths as listeners and speakers, areas for improvement, and the strategies they found most helpful in oral communication situations.

[32] http://www.edu.gov.on.ca/eng/curriculum/elementary/language18currb.pdf

Specific expectations (The specific expectations for strand Oral communication are divided into three categories – Listen and Understand, Speaking and Communicate and Reflecting on Oral Communication Skills and Strategies – here below are the specific expectations from category Reflecting on Oral Communication Skills and Strategies). By the end of Grade 1, students will:
Metacognition 3.1 Begin to identify, with support and direction, a few strategies they found helpful before, during, and after listening and speaking Teacher prompts: “How do you know what to listen for?” “What could you do after you listen to check and see if you understood what you heard?” “What could you do if you didn’t understand what you heard?” ”What do you think about before you begin to talk?” “When you are talking, how can you tell if the audience understands?” “What could you do to help the audience understand what you are saying?” *Interconnected Skills* 3.2 Begin to identify how their skills as viewers, representers, readers, and writers help them improve their oral communication skills Teacher prompts: “How do you learn new words that you can use when you are speaking?” “What words have you learned in the books you are reading that help you understand what you hear or that you can use while you are speaking?”

Advantages and disadvantages of the approaches to the work with curricula and learning objectives based on debate in the province and interviews

There is too little debate on curriculum in Ontario, according to a number of interview persons. Instead focus for the debate are the provincial standardised assessment tests, see section 6.1 for description and further perspectives.

Concerning the mathematic curriculum the clear competence-based learning objectives are seen as good support for teachers. One perception of the English language curricula is that the expectation-approach, compared to an approach that stress the specific content teachers should teach, offers o lot of freedom for schools and teachers – freedom regarding for an example what tools and books to use. The advantage of the freedom is flexibility for teachers, they have the ability to adjust do their students specific needs. The disadvantage presented is lack of consistency, and some interview persons state that the design of the assessment tests limits the freedom.

Several interview persons also stress that the content in the curricula has to be more research-based.

3.3 Linkage of learning objectives in pre-school and in youth education

3.3.1 Pre-school and transition to primary school

Most of the children in Ontario go to Kindergarten and the learning expectations outlined in the Kindergarten program represent the first steps in a continuum of programming from the early years to Grade 8. They describe learning achievements that provide the foundation for successful future learning experiences. Learning expectations are given for the six areas of learning – Personal and Social Development, Language, Mathematics, Science and Technology, Health and Physical Activity, and the Arts.

Full-Day Early Learning–Kindergarten programs based on the learning expectations must take into consideration the widest possible range of children’s life experiences and situations. The expectations are not meant to be a set of discrete skills to be developed. They represent a range of ways of thinking at certain stages in young children’s development, and they contain a continuum of concepts and skills that are appropriate for children in the early years, including critical thinking skills.

Two sets of expectations are listed for each area of learning, as follows:

- **Overall expectations**, which describe in general terms the knowledge and skills that children are expected to demonstrate by the end of the Full-Day
- Early Learning–Kindergarten program.
- **Specific expectations**, which describe the knowledge and skills in greater detail.

An illustrating example of overall expectations and specific expectations:

Overall expectations – Connected to The big idea "Children are connected to others and contribute to their world", in the area of Personal and Social Development By the end of the Full-Day Early Learning–Kindergarten program, children will:
1. identify and use social skills in play and other contexts; **2.** demonstrate an ability to use problem-solving skills in a variety of social contexts; **3.** demonstrate a beginning understanding of the diversity in individuals, families, schools, and the wider community.

Specific expectations (this expectation is connected to the first of the listed overall expectations) By the end of Grade 1, students will:	Making connections: Ways in which children might demonstrate their learning	Making connections: Early Learning-Kindergarten (EL-K) Team's intentional interaction
Act and talk with peers and adults by expressing and accepting positive messages *(e.g., use an appropriate tone of voice and gestures, give compliments, give and accept constructive criticism)*	Saying *"Fatima helped me pick up the blocks."* *"I didn't like it when you took my book."* *"That's a good painting."*	Responding A member of the EL–K team observes that children at the block centre are taking blocks from a structure that other children are building. The team members decide to model some strategies on cooperation for the children. They also decide to notice and name positive strategies used by the children (e.g., *"I noticed you listening to Jay's suggestions for building your tower"*) in order to support development of self-regulation.

In the program it is described that the methods used for assessing and evaluating children's learning should be clearly identified and based on the learning expectations. Early Learning–Kindergarten teams will communicate findings from assessment and evaluation of achievement to the parents, the child, and others involved in the child's learning. There are no tests in Kindergarten or admittance tests for grade 1[33].

3.3.2 Youth education and transition to youth education (transition between grade 8 and grade 9)

In Ontario youth education/secondary school is compulsory. The learning objectives between grade 8 and grade 9 are linked together in the same way as between other grades in elementary school or secondary school.

A support team, called the Student Success team , in each secondary school is responsible for the implementation of strategies that promote a smooth transition from Grade 8 to Grade 9 for students who may struggle with the secondary school program. These strategies include the following:

- Developing a process for sharing student information between elementary and secondary schools, subject to rules relating to privacy and disclosure;
- Creating student profiles that highlight each student's strengths and interests, as well as the student's learning, social, and emotional needs;

[33] http://www.edu.gov.on.ca/eng/curriculum/elementary/kindergarten_english_june3.pdf

- Providing assistance during orientation and other pre-entry activities;
- Providing individualized timetabling and putting in place appropriate support strategies and interventions, based on student strengths and needs, that will be sustained beyond the orientation period;
- Identifying advocates and mentors for students requiring additional support;
- Ensuring ongoing tracking and monitoring of student progress by the Student Success team.

A student who does not successfully complete the last grade in elementary school, grade 8, and is not promoted from elementary school may apply for admission to a secondary school. The student will be admitted to the secondary school if the principal of the secondary school is satisfied that the student is capable of undertaking the work of the school[34].

3.4 Curriculum and learning objectives supporting teaching, planning, evaluation, and involvement of parents and pupils

3.4.1 Support of teachers teaching, planning and evaluation - The relation between the curricula and teacher's planning, teaching and evaluation

All curriculum expectations must be accounted for in instruction, but evaluation focuses on students' achievement of the overall expectations. A student's achievement of the overall expectations is evaluated on the basis of his or her achievement of related specific expectations (including the mathematical process expectations). Teachers will use their professional judgment to determine which specific expectations should be used to evaluate achievement of the overall expectations, and which ones will be covered in instruction and assessment (e.g., through direct observation) but not necessarily evaluated[35].

The process for assessment and evaluation of learning in Ontario is detailed in the achievement charts in the curriculum which provide a standard approach to key elements of learning in every subject, focused on Knowledge and Understanding, Thinking, Communication and Application.

Evaluation practices and tests
In Ontario teachers have a lot of freedom concerning evaluation methods and support from guidelines made on provincial level.

One way of reporting is report cards, used by the teachers in elementary and secondary schools. The teacher report on how well the student is developing important learning skills and work habits. All secondary students will receive a provincial report card that lists the student's courses, percentage marks for each course, course media, credit earned, learning skills and work habits, comments, classes missed, and times late.

Standardised provincial tests
The Education Quality and Accountability Office (EQAO) was established by the Ontario government in 1996 to evaluate the quality and effectiveness of elementary and secondary school education.

The EQAO is responsible for:
- developing and administering tests to evaluate the achievement of Ontario elementary and secondary school students;
- reporting test results to the Minister and to the public; and
- providing recommendations to improve test results.

Large scale assessment tests in English and mathematics for the students in grade 3, 6 and 9 alt. 10 (see below) are based on the Ontario curricula. These assessments are facilitated through EQAO. The

[34] Boards must ensure that every secondary school has a Student Success team and a Student Success teacher to work in collaboration with school staff to support students who are struggling with their secondary school program and are at risk of not graduating. The Student Success team will include, at a minimum, the Student Success teacher and representation from administration, guidance, and special education. The inclusion of other members such as classroom teachers, child and youth workers, social workers, and attendance counselors will be determined by local needs.

[35] http://www.edu.gov.on.ca/eng/curriculum/elementary/math18curr.pdf

test results from the province test program results are published, categorized by school. A purpose with the test program is to assess how well students are learning the curriculum and to identify the need for change[36].

The provincial tests measure core reading, writing and math skills based on the expectations in *The Ontario Curriculum*. Ontario's province-wide tests assess cumulative knowledge and skills at four key stages:

- Grade 3 (literacy and math tested at the end of the primary division);
- Grade 6 (literacy and math tested at the end of the junior division);
- Grade 9 (math tested in the first year of secondary school) and
- Grade 10 (literacy tested as a graduation requirement).

Each boards decides how to responds to the test results. Districts that scores poorly receive more support (also economic support) from the province level.

The students do not have to pass the test to be able to go on to the next grade.

Evaluations and tests – And the relation between the curricula and teacher's practice in planning, teaching, and evaluating for revising their teaching
- Strengths and weaknesses pointed out in interviews
The clear competence-based learning objectives in the Mathematic curricula are, as mentioned in section 4.2, seen as a good support for teachers in planning, teaching and evaluation.

Several interview persons stress that teachers have a great freedom concerning evaluation practice, except regarding the EQAO tests. Critics to the EQAO tests argue that the tests do not reflect the content of the curriculum, especially not the English language curriculum. Further on critics state that the design of the provincial tests has too much impact on the planning and teaching in the way that teachers feel that they have to adjust to the test design, and this is something negative according to the critics because of the divergence between the tests and the curricula. Some interview persons stress that middleclass students born and raised in Canada advantage from the design of the provincial tests, and that the tests are not adjusted to a modern and multicultural society.

3.4.2 Involving of parents and pupils

In the curriculum it is stated that parents have an important role to play in supporting student learning. Studies show that students perform better in school if their parents or guardians are involved in their education. By becoming familiar with the curriculum, parents can find out what is being taught in each grade and what their child is expected to learn. This awareness will enhance parents' ability to discuss schoolwork with their child, to communicate with teachers, and to ask relevant questions about their child's progress. Knowledge of the expectations in the various grades also helps parents to interpret their child's report card and to work with teachers to improve their child's learning[37].

It is also stressed in the curricula that taking responsibility for their own progress and learning is an important part of education for all students. Understanding for example mathematical concepts and developing skills in mathematics require a sincere commitment to learning. Younger students must bring a willingness to engage in learning activities and to reflect on their experiences. For older students, the commitment to learning requires an appropriate degree of work and study. Students are expected to learn and apply strategies and processes that promote understanding of concepts and facilitate the application of important skills. Students are also encouraged to pursue opportunities outside the classroom to extend and enrich their understanding of mathematics[38].

[36] http://www.eqao.com/pdf_e/12/PowerOntProv_TestingProg_en.PDF
[37] *The Ontario Curriculum Grades 1-8 Mathematics* http://www.edu.gov.on.ca/eng/curriculum/elementary/math18curr.pdf
[38] Ibid.

3.5 The use of IT supported teaching and digitalized learning objectives

The role of technology

In every curriculum for every subject there is a section about the role of technology, related to the school subject.

According to the Ontario curriculum information and communications technologies (ICT) provide a range of tools that can significantly extend and enrich teachers' instructional strategies and support students' language learning. ICT tools include multimedia resources, databases, Internet websites, digital cameras, and word-processing programs.

The use of ICT tools described is to help students to collect, organize, and sort the data they gather and to write, edit, and present reports on their findings. Information and communications technologies can also be used to connect students to other schools, at home and abroad, and to bring the global community into the local classroom. Whenever appropriate, therefore, students should be encouraged to use ICT to support and communicate their learning.

E-Learning in Ontario

The Ministry of Education designed the provincial e-learning strategy to assist school boards in providing digital learning opportunities for students. Through e-Learning Ontario, the ministry offers school boards access to the wide range of software and resources included in the provincial Learning Management System (LMS) and the Ontario Educational Resource Bank (OERB). The LMS provides online credit courses for Grades 9 to 12, elementary resource packages, and Prior Learning Assessment and Recognition challenges posted by the ministry and the OERB offers thousands of digital resources to support instruction in all grades, from Kindergarten through Grade 12. School boards can also use the provincial LMS and the OERB to support blended learning12 approaches in their schools.[39]

School boards that participate in the e-Learning Ontario strategy retain full responsibility for the delivery of courses and resources at the local level. They determine the degree of access they provide to their teachers and students, and they are responsible for issuing user identifications and passwords. To be eligible for access to the e-Learning Ontario strategy, students must be registered in a provincially funded school.[40]

Permission to take e-learning courses must be given by a student's home school, and students must apply and enrol through their home school. Students remain a student of their home school even if the course is delivered by a teacher in another school. The schedule for reporting marks will be that of the school delivering the e-learning course.[41]

ICT standards

On district level, some school boards have created explicit ICT standards.

The Toronto District School Board and The TDSB ICT Standards document is an illustrative example. The TDSB ICT Standards document is a framework for students, teachers, and administrators to utilize technology as a tool for teaching and learning for K to 12 students throughout the TDSB. With the overall goal of improving student achievement, the ICT Standards document is a guide to help teachers integrate ICT into The Ontario Curriculum, into teaching practice, and into the student's repertoire of skills in order to support and enhance continuous learning. The TDSB ICT Standards document prescribes skills and the corresponding tools to provide the students with learning opportunities to master skills at certain grade levels.[42]

Here below is an example of ICT standards from The TDSB ICT Standards document. The standards in the example are in the specific area/strand of Technology Operations and Concepts, there are several areas/strands for each subject.

---

[39] http://www.edu.gov.on.ca/eng/document/policy/os/ONSchools.pdf

[40] Ibid.

[41] Ibid.

[42] http://www.tdsb.on.ca/wwwdocuments/programs/computers_in_schools/docs/TDSB-ICT_Standards_Bookmarked.pdf

ICT Standards Grade 3
Area: Technology Operations and Concepts
Expectations: Students demonstrate a sound understanding of technology concepts, systems, and operations.
Expectations: **Fundamental Skills** • Manage content within an operating system and web environment (e.g., documents, links, bookmarks, tags) • Create content that demonstrates planning, writing, and editing for a particular purpose (e.g., word processing, spreadsheets software) **Digital Tools** • Use digital tools for a curricular purpose (e.g., digital camera, voice recorder, interactive technologies, digital probes/sensors, hand-held devices)

The TDSB ICT Standards document also contain examples of curricular connections, see illustrative example here below:

Curricular Connections: *Grade 3*
Essential learning: Organizing and Publishing
ICT Experience: Word processing Students will demonstrate proper technique and posture when using a keyboard. Using a word processor, students will publish an original text.
Examples of Curricular Integration • Create a poster/pamphlet to advertise early settler/pioneer life *(Social Studies)* • Capture the growth and change in plants with a digital camera and then import the images into a report explaining • the scientific process *(Science)* • Use interactive whiteboards and resources to support problem solving and capture learning in an electronic journal *(Math)*

Annex

References:

City of Peterborough
Elementary and Secondary School
http://www.welcomepeterborough.ca/Learning/Elementary_and_Secondary_School.htm

Education Quality and Accountability Office
The Power of Ontario's Provincial Testing Program
http://www.eqao.com/pdf_e/12/PowerOntProv_TestingProg_en.PDF

Ministry of Education:

The Education Act (1990)
http://www.e-laws.gov.on.ca/html/statutes/english/elaws_statutes_90e02_e.htm#s170p2s1

The Ontario Kindergarten program
http://www.edu.gov.on.ca/eng/curriculum/elementary/kindergarten_english_june3.pdf

Language Curriculum grade 1-8
Mathematics Curriculum grade 1-8
http://www.edu.gov.on.ca/eng/elementary.html

English Language Curriculum grade 9-10
English Language Curriculum grade 11-12
Mathematics Curriculum grade 9-10
Mathematics Curriculum grade 11-12
http://www.edu.gov.on.ca/eng/curriculum/secondary/index.html

Native Language Curriculum grade1-8
http://www.edu.gov.on.ca/eng/curriculum/elementary/nativelang18curr.pdf

The Ontario Curriculum grade 9 to 12 Course Descriptions and Prerequisites (2011)
http://www.edu.gov.on.ca/eng/document/curricul/secondary/descript/descri9e.pdf

Growing Success – Assessment, evaluation and reporting in Ontario schools (2010)
http://www.edu.gov.on.ca/eng/policyfunding/growsuccess.pdf

Ontario Schools – Kindergarten to grade 12 - Program and policy requirements (2011)
http://www.edu.gov.on.ca/eng/document/policy/os/ONSchools.pdf

Who's responsible for your child's education?
http://www.edu.gov.on.ca/eng/document/brochure/whosresp.html#minister

What do you need to graduate?
http://www.edu.gov.on.ca/extra/eng/ppm/graduate.html

Ministry of Education and Training
Discussion Paper: Curriculum for Ontario Secondary Schools - Understanding and Participating in Curriculum Change (1996)
http://www.edu.gov.on.ca/eng/document/discussi/curricul.pdf

OECD
Strong performers and successful reformers in education: Lessons from PISA for the United States. Ontario, Canada: Reform to Support High Achievement in a Diverse context (2010)
http://www.oecd.org/pisa/pisaproducts/46580959.pdf

People for Education Organisation

Declining enrolment/schools closing Report 2012
http://www.peopleforeducation.ca/wp-content/uploads/2012/05/declining-enrolment-early-release-2012.pdf

Toronto District School Board
High School Grad Requirements
http://www.tdsb.on.ca/_site/viewitem.asp?siteid=126&menuid=498&pageid=387

The TDSB ICT Standards
http://www.tdsb.on.ca/wwwdocuments/programs/computers_in_schools/docs/TDSB-ICT_Standards_Bookmarked.pdf

Persons interviewed:

Dr. Christine Suurtamm, Director, Teacher Education Associate Professor, Mathematics Education, Faculty of Education, University of Ottawa

Douglas McDougall, Chair, Department of Curriculum, Teaching and Learning OISE/University of Toronto

Clair Kosnik, Professor, Department of Curriculum, Teaching, and Learning at OISE/University of Toronto

Ramboll has also interview a representative from the Ontario Ministry of Education and a professor who preferred to be anonymous.

Appendices

Appendix 1: Requirements for the Ontario Secondary school diploma

1. 18 compulsory credits

Students must earn the following compulsory credits to obtain the Ontario Secondary School Diploma:

- 4 credits in English (1 credit per grade)*
- 3 credits in mathematics (1 credit in Grade 11 or 12)
- 2 credits in science
- 1 credit in Canadian history
- 1 credit in Canadian geography
- 1 credit in the arts
- 1 credit in health and physical education
- 1 credit in French as a second language
- 0.5 credit in career studies
- 0.5 credit in civics

2. Plus one credit from each of the following groups:

New **1 additional credit** (group 1): additional credit in English, **or French as a second language,** ** **or a Native language, or a classical or an international language,** or social sciences and the humanities, or Canadian and world studies, **or guidance and career education, or cooperative education*****

New **1 additional credit** (group 2): additional credit in health and physical education, or the arts, or business studies, **or French as a second language,** ** **or cooperative education*****

New **1 additional credit** (group 3): additional credit in science (Grade 11 or 12), or technological education, **or French as a second language,** ** **or computer studies, or cooperative education*****

3. In addition to the compulsory credits, students must complete:
   - 12 optional credits†
   - 40 hours of community involvement activities
   - the provincial literacy requirement[43]

*A maximum of 3 credits in English as a second language (ESL) or English literacy development (ELD) may be counted towards the 4 compulsory credits in English, but the fourth must be a credit earned for a Grade 12 compulsory English course.

**In groups 1, 2, and 3, a maximum of 2 credits in French as a second language can count as compulsory credits, one from group 1 and one from either group 2 or group 3.

***A maximum of 2 credits in cooperative education can count as compulsory credits.

†The 12 optional credits may include up to 4 credits earned through approved dual credit courses.

[43] http://www.edu.gov.on.ca/extra/eng/ppm/graduate.html

4. SCOTLAND

This country report contains a systematic review and description of Scotland's primary and secondary school (equivalent to 1st through 11th grade in the Danish system) in relation to curricula in native language and mathematics. The country report includes course range and curriculum, as well as descriptions on the rationale of the model of Scotland, including types of learning objectives, types of content requirements, and how learning objectives are used in teaching and in the involvement of parents and pupils.

This country report is based on desk research of legislation and regulation, existing reports and research, which has formed the basis for designing the curriculum model applied by Scotland. Furthermore, Ramboll has conducted selected interviews with the following resource persons: Tom Macintyre Senior Lecturer (Mathematics Education - Institute for Education, Teaching and Leadership) – Edinburgh University, David Beckett, Education Lobbyist for the National Association for State Directors Of Career Technical Education in Washington DC, but former elected official in the Educational Division in Edinburgh and Professor Graham Donaldson from University of Glasgow (School of Education).

The work approach is descriptive in nature. It is not an evaluation or an impact analysis of the work with subjects and curriculum in each country, unless it is explicitly mentioned by reference to existing documentation or research. Ramboll uses the report to synthesize across the countries studied to the client, Danish Ministry of Children and Education.

The report is divided into the following sections:

1. Country introduction
2. Curriculum in native language and mathematics, including course range, minimum no. of hours, at which school years and levels of competence
3. Characteristics of the national education system and steering model
4. Curriculum – Basic description of curriculum, learning objectives and content, including types of texts/material, working with cross-cutting themes, etc.
5. The use of IT supported teaching.

4.1 List of abbreviations

P	Primary
S	Secondary
CfE	Curriculum for Excellence
DSM	Devolved School System
HM	Her Majesty
SSLN	Scottish Survey of Literacy and Numeracy

4.2 Characteristics of the education system

In Scotland, there is no legislation regarding the amount of hours schools should teach in a particular subject. This responsibility is delegated to the individual schools, monitored by the Local Authorities and subject to inspection by HM Inspectorate of Education. Although the Local Authorities determine the amount of hours pupils should have learning in the classroom in cooperation with the schools in their district, it is most common that pupils in primary school attend classes 25 hours per week. Pupils at secondary school level usually attend classes 27 hours per week.

		Introductory classes			Middle classes			Leaving classes			10 + 11 th class (both also com-pulsory)
		1	2	3	4	5	6	7	8	9	10 + 11
Minimum number of hours at each class level – Total	Recommended no. of hours in class weekly	25 hours weekly			25 hours weekly			25	27	27	27 hours weekly

If inspections by HM Inspectorate of Education indicate that the actual amount of hours of classroom teaching deviates greatly from the abovementioned 25 and 27 hours respectively, schools are asked to make adjustments[1].

Principles of inspection and review by HM Inspectors

Each year a sample of primary and secondary schools are inspected. The focus is the educational functions of the Local Authorities. Inspections are based on the following guiding principles:

1. Independence, impartiality and accountability
2. Having all learners or users at the heart of inspection and review
3. Equality and diversity
4. Transparency and mutual respect
5. Observing practice and experiences directly: focusing on outcomes and impact
6. Building on self-evaluation
7. Partnership working with the users of our services and other providers/scrutiny bodies
8. Improvement and capacity building
9. Proportionality, responsiveness and assessment of risk
10. Best value

[1] http://www.educationscotland.gov.uk/Images/PrinciplesofInspectionandReview2010_tcm4-683703.pdf

4.2.1 Brief description of the primary and secondary school in the country

The Scottish educational system consists of pre-school (optional), primary school (P1-P7) and secondary school (four compulsory years; S1-S4 and two optional years; S5-S6). In total, 11 years of education are compulsory. Primary and secondary school is divided into two separate institutions. Pupils must be at a minimum 16 years of age to complete compulsory education. In Scotland, secondary schools are in some cases also referred to as high schools or academies. Further education is referred to as post-secondary education. A model which outlines the Scottish educational model is presented below.

School types	Optional/ Compulsory	Danish system	Scottish system	Ages beg. of schools year **Danish system** (approx.)	Ages beg. of schools year **Scottish system** (approx.)
Secondary School	Optional	13	S6	19	17
		12	S5	18	16
	Compulsory	11	S4	17	15
		10	S3	16	14
		9	S2	15	13
		8	S1	14	12
Primary School		7	P7	13	11
		6	P6	12	10
		5	P5	11	9
		4	P4	10	8
		3	P3	9	7
		2	P2	8	6
		1	P1	7	5
Pre-School	Optional	0. cl.	Pre-school	6	4
					3

The Scottish schools

There are 2,722 public schools in Scotland (figures from 2013); 2,153 primary schools and 376 secondary schools. 377 of the public schools are denominational schools, the vast majority of which are catholic (373, three are Episcopal and one is Jewish). Furthermore, there are 104 independent schools in Scotland[2] .In addition to the public schools there are 193 special schools (schools for children with additional needs[3]). As is evident from the table below, the amount of pre-schools, primary-, secondary- and special schools is declining[4].

	2004	2005	2006	2007	2008	2009	2010	2011
Schools								
Pre-schools (1)	2,836	2,761	2,750	2,702	2,645	2,615	2,586	2,553
Primary	2,217	2,194	2,184	2,168	2,153	2,128	2,099	2,081
Secondary	386	385	381	378	376	374	372	367
Special	192	190	190	183	193	190	163	158

There are large regional differences in Scotland, in terms of demography. This means that the size of schools varies greatly. As a result, no national average for school size is calculated, rather statistics is available on schools dependent on type and location (i.e. large urban, other urban, small accessible towns, small remote towns, accessible rural and remote rural). In the large urban areas, primary schools have an average of 299.8 students. In remote rural areas, the average is 124.1[5].

Class size

In the Scottish primary schools the average class consists of approx. 23 pupils. In 2007, regulations with effect from August 2011 were introduced by the Scottish Government, which reduced the class size maximum in all P1 classes from 30 to 25[6] . There is no data published on the average class sizes of secondary schools[7].

The table below illustrates the percentage of pupils by class size, P1 -P3 pupils (1) Average Class Size (2)[8].

	Percentage of pupils by class size, P1 -P3 pupils (1)			Average Class Size (2)	
Year	**18 or fewer**	**19-25**	**More than 25**	**P1-P3**	**Primary**
2006	12.7	50.7	36.6	23.6	23.2
2007	15.3	58.9	25.8	22.8	22.8
2008	15.5	62.6	21.9	22.6	22.7
2009	16.1	62.9	21	22.5	22.5
2010	21.6	53.6	24.8	22.4	22.5
2011	20.2	56.7	23.2	22.5	22.7
2012	18.8	58.0	23.2	22.6	22.7

(1) The percentage of P1-P3 pupils in classes of 18 or fewer includes two-teacher classes with 36 or less. Classes taught by two teachers at all times are treated as two classes of half the size.

[2] www.scotland.gov.uk

[3] "A school which provides a range of services that are not available in mainstream schools, offering enhanced provision for pupils who have additional support needs. These include social, emotional and behavioural difficulties, profound or complex learning needs and physical and sensory impairment" - www.educationscotland.gov.uk/scottishschoolsonline/glossary

[4] http://www.scotland.gov.uk/Publications/2011/12/06114834/4 Table 1.2

[5] http://www.scotland.gov.uk/Publications/2012/05/7940/5 Table 3.2

[6] http://www.scotland.gov.uk/Topics/Education/Schools/Teaching/classes

[7] www.scotland.gov.uk

[8] http://www.scotland.gov.uk/Topics/Statistics/Browse/School-Education/TrendClassSizes

(2) Data refer to the average class size of pupils in each stage, not the average class size of single stage classes. The total average class size is calculated on a different basis than the P1 to P3 class sizes.

Teacher to pupil ratio and number of teaching hours

In Scotland, there is 1 teacher for 13.4 pupils[9]. The teachers work week consists of 35 hours per week. Out of the 35 hours, teachers may, at a maximum, have 22.5 actual hours of classroom contact (22.5x60 min.). The school day is usually divided into five or six sessions, with duration of one hour, or eight sessions of 40 minutes[10]. A number of hours corresponding with one third of the time the teacher has classroom contact is to be spent on preparations for class as well as correction of papers, the rest on additional time for preparation, administrative tasks, parent meetings etc.[11]. This is outlined in the teachers' agreement (in Danish; *overenskomst*). The teachers can freely decide if they spend the preparation/administrative time of their work at the school or at home.

Becoming a teacher

Pupils who wish to become teachers can do this in two manners; either they take Bachelors of Education or they obtain a bachelor in the field of study they wish to teach in (i.e. English or Mathematics), and add a teachers specialisation to their bachelor's degree (Professional Graduate Diploma in Education). Teachers specialise in either learning and teaching in the primary curriculum or learning and teaching secondary curriculum. Primary teachers specialise in teaching all subjects whereas secondary teachers specialise in certain subjects.

Bilingualism

The Scottish educational system is bilingual; both English and Gaelic are official languages, but merely 1.15 % of the Scottish population speaks Gaelic[12]. Yet, the Scottish government supports that pupils can complete primary and secondary school in Gaelic. The amount of pupils who complete their education in Gaelic in public schools is 3,497 pupils out of a total of 670,000 pupils (school year 2009/2010[13]). In 2012, there were 26,131 pupils out of a total 671,218[14] who took English as an additional language, which is equivalent to approximately 3.9 % of the pupil body. About 10 % of the pupils in Scotland have another national background than British[15].

Pupils with special needs

Pupils with additional needs of any kind are protected under the Scottish educational inclusion strategy called 'Count Us In'[16]. More information about the inclusion strategy can be found in the report 'Count us in: Achieving inclusion in Scottish schools' which is published by HM Inspectorate of Education.

PISA-results

While the main OECD publication reports on the United Kingdom as a whole, Scotland participates as a distinct adjudicated area enabling results to be published separately.

PISA-results 2009 Scotland vs. Denmark

	Scotland[17]	Denmark[18]
Reading	**500**	**495**
Mathematics	**499**	**503**
Science	**514**	**499**

[9] www.scotland.gov.uk/Resource s

[10] www.educationscotland.gov.uk

[11] http://www.scotland.gov.uk/Resource/Doc/158413/0042924.pdf s. 30.

[12] http://www.scotland.gov.uk/GaelicLanguage

[13] www.scotland.gov.uk/TrendPupilNumbers

[14] This figure only covers learners with English as an additional language when it becomes an additional support need.

[15] http://www.scotland.gov.uk/Publications/2012/12/2355/15

[16] www.educationscotland.gov.uk

[17] http://www.scotland.gov.uk/Resource/Doc/334567/0109376.pdf

[18] http://uvm.dk/Uddannelser-og-dagtilbud/Folkeskolen/hovedresultater_PISA_2009

PISA-result development Scotland vs. Denmark 2006-2009

	Scotland	Denmark
Reading	**+1 point** (499-500)	**+1 point** (494-495)
Mathematics	**-7 points** (506-499)	**-10 points** (513-503)
Science	**-1 point** (515-514)	**+3 points** (496-499)

4.2.2 Description of the management model for the Scottish school system

The section below outlines the most important details about the Scottish educational management model.

National regulation

The goals and objectives of the Scottish educational policy are shaped at the national level. The current framework for the Scottish educational policy in regards to pre-schools, primary schools and secondary schools is called Curriculum for Excellence 3-18 (CfE). Before the CfE, the Scottish school system had the 5-14 National Guidelines[19]. In the CfE, policies and guidelines concerning education and national learning objectives are outlined. CfE determines the educational focus areas, goals and objectives, the educational inclusion policy, the competences pupils are to master and attitudes towards health etc.[20]

Local responsibilities

Implementation of the Scottish inclusion strategy, the start and end time of each school day, the school lunch scheme etc. is determined locally by the individual schools and the Local Authorities of each council[21]. In Scotland, there is no national legislation which determines a fixed amount of hours Scottish pupils must attend class during primary and secondary school, nor is there any legislation on how many hours pupils should receive classroom teaching in a particular subject. This is to be decided by the individual schools: "*In 1993 […] even, the Secretary of State for Scotland decided to extend the process of decentralisation begun within the framework of the United Kingdom reform by adopting a model of school management which is still in operation: the Devolved School System (DSM). A few years later, after a difficult parliamentary debate lasting several years, Italy adopted a policy of school autonomy in 1997. Since 2007, there has been some debate in Scotland about the decentralization of autonomy from the state to local authorities and individual schools, following further decentralization*"[22].

The relationship between municipal level and local school level

As mentioned previously, there is no national legislation regarding the minimum amount of hours pupils should be taught in a particular subject, with the exception of physical education. A minimum of two hours per week has been set for physical education. Guiding principles concerning how many hours of education pupils should receive in a particular topic is determined by each individual school in cooperation with the Local Authorities.

Division of pupils into qualification levels

It is not a requirement put forth by the CfE guidelines that pupils should be divided into classes or working groups depending of their skill level. The CfE acknowledges that some pupils may be quick or slow to reach the five learning levels of the Scottish system (in Danish; *læringstrin*). The five levels are discussed later in this report. It is the responsibility of the Local Authorities to ensure that the individual schools address the difference in skills, and address this in their inclusion policy[23] . Yet "*Almost all schools do mixed ability classes from primary until S3. It is not uncommon to do grouping in classes – but they are not fixed. S4 is more grouped*" explained one of the experts. He continued to explain that groupings according to academic ability are the source of debate *"[There are] some tensions on this subject – but mostly teachers support mixed-ability classes. The biggest opponents on this are the teachers of mathematics due to the linear nature of mathematics – they would like to have more set-*

[19] On the transition from 5-14 National Guidelines to CfE see this report: http://www.leeds.ac.uk/educol/documents/187593.pdf

[20] The CfE can be found in its entire form here: http://www.educationscotland.gov.uk/thecurriculum/whatiscurriculumforexcellence/index.asp

[21] In Scotland, municipalities are referred to as Councils. There are 32 Councils in Scotland.

[22] http://eacea.ec.europa.eu/education/Eurydice/documents/thematic_reports/090EN.pdf

[23] More information on the Scottish educational inclusion policy can be found here: www.educationscotland.gov.uk/supportinglearners/additionalsupportneedsasp

ting. But all in all it's a local decision – some local authorities leave it entirely for the schools to decide". Another of the experts adds in addition to this that the setting of pupils based on ability level is viewed as undesirable by most professionals, as it makes it even harder for the not-so-well performing pupils to improve. Furthermore, high achieving pupils benefit from mixed ability teaching as well, as it gives them the opportunity to explain how they understand a subject, which improves their own understanding of it, another expert points out.

The course range

The Scottish educational system places an emphasis on width in the range of courses offered during the initial years of schooling[24]. This focus changes during the senior phase of schooling (S4-S6), where educational specialisation is emphasized to ensure pupils developed competences in specific educational areas[25].

[24] www.educationscotland.gov.uk

[25] www.educationscotland.gov.uk

4.3 Curriculum - learning objectives and content

This section gives a description of Scotland's work with curriculum, both in reference to objectives and content.

4.3.1 Curriculum

As touched upon previously, the Scottish educational system has one curriculum for primary and secondary school, the CfE, which includes the overall learning objectives for the school system, learning objectives for each subject, guidelines for education etc. Below is a model of the CfE and the relationship between the individual units of it.

Curriculum for Excellence Model - overview, hierarchy of learning objectives

The CfE model below is designed to provide an overview of the Scottish hierarchy of learning. The different colours indicate different levels of the curriculum/learning[26].

Units	Elements	Characteristics	Compulsory
Curriculum for Excellence			Yes
Overriding purpose – four capacities	• Successful learners • Confident individuals • Responsible citizens • Effective Contributors	Competencies	Yes – *the values of all schools must encourage these four competencies.*
Eight curriculum areas	• Expressive arts • Health and Wellbeing • Languages • Mathematics • Religious and Moral Education • Sciences • Social Studies • Technologies	Curriculum areas	Yes – *pupils must be familiar with all the eight overall areas[1].*
Across curriculum focus areas	• Numeracy • Literacy • Health and Wellbeing	Curriculum areas	Yes
Experiences and outcomes	Five levels of learning: • Early (Preschool-P1) • First (P1-P4) • Second (P4-P7) • Third and Fourth (S1-S3) • Senior (S4-S6)	Competencies and achievements - pupil perspective	Yes
National Qualifications (exams)	• National 2-3 • National 4 • National 5 • Access Highers • Advanced Highers	Descriptions of what capabilities are required for passing a given exam in each separate subject (e.g. what is required to pass Spanish at Access Highers-level).	Yes
Principles and practice	• Sharing practice • Resources	Guidance for teachers in how to provide the expected experiences and outcomes	No

Curriculum management

As described above, there is a national framework for education combined with specific guideless for individual subjects (all together referred to as Experiences and Outcomes, Principles and Practice and National Qualifications). These define the framework and curriculum, but not the syllabus. Additionally, the curriculum does not define what books, text etc. are to be used in the classroom. Rather, it defines learning stages, techniques learners should be able to comprehend, subjects which the learner must be

[26] CfE has been under development since 2003. It was officially implemented in August 2010 when the pupils who would be the first to sit the new exams in 2014, National 2-3 plus National 4 and 5, started secondary school. Primary schools have however been using CfE approaches in their work for a number of years. The new exams will replace the current exams, Standard Grade and Intermediate exams, with National 4 and National 5 exams. Higher and Advanced Higher exams will remain in revised form. Higher will be known as Access Highers. Standard Grade and Intermediate will have been phased out completely by 2015.

familiar with etc. The material is aimed at supporting teachers in planning their teaching, by suggesting tasks for them to give to the pupils, identifying aspects of a particular topic which may be difficult to comprehend for pupils etc. It also aims at providing clear guidelines for pupils concerning what is expected of them in terms of capabilities. This approach is combined with individual learned work plans, which helps both tutors and teachers to be familiar with each pupil's needs and abilities[27]. The content of the teaching – what textbooks etc. to use – is a matter between local authorities and schools, though they must consider national guidelines when deciding on this[28].

CfE divides learning into eight overall curriculum areas:

1. Expressive arts
2. Health and wellbeing
3. Languages
4. Mathematics
5. Religious and Moral Education
6. Sciences
7. Social Studies
8. Technologies

According to one of the experts "*Numeracy and literacy in native language are cross-subject responsibility in the curricula. This means that all teachers can see what pupils are supposed to learn and what they have to do in relation to this. Therefore, numeracy and literacy are integrated in all areas of the curriculum – contrary to having a silo approach*". This places pupils and teachers at an advantage, where literacy and numeracy can be integrated into other subjects the pupils find interesting.

Each of the eight curriculum areas is tied to a series of Experiences and Outcomes, which is a term for competence learning objectives (see CfE Model). Additionally, there are three competence learning objectives across curriculum areas, which are Literacy, Numeracy and Health and Wellbeing. Principles and Practice sets out the purposes of learning within the eight curriculum area, describes how the experiences are organised, and offers guidance on aspects such as learning and teaching, broad features of assessment, progression and connections with other areas of the curriculum.

The contents of the country-specific approach to the curriculum for native language and math
Primary and secondary learning and curricular in Scotland is competency oriented, so is higher education (see description of the Experiences and Outcomes, CfE Model). The competency-based requirements for native language and mathematics are listed below, and are applicable for all class levels:

English, Gaelic and Literacy **The elements listed below are elements which all learners must experience during their time in primary and secondary school.**					
The curriculum for English and Literacy is divided in three organising areas	**Listening and talking**		**Reading**		**Writing**
The three areas are each divided in to five similar learning elements	Enjoyment and choice	Tools (skills and knowledge)	Finding and using information	Understanding, analysing and evaluating	Creating texts

The pupils' progress through these 3x5 organising elements are measured by the five learning stages. A pupil's progress in English and Literacy in the three organising areas, in the five learning elements, and through the five learning stages, is measured in competences.

[27] http://www.ibe.unesco.org/fileadmin/user_upload/COPs/News_documents/2010/1003Oman/Mov_Forward_2ndEd_EFA.pdf
[28] http://www.scotland.gov.uk/Topics/Education/Schools/curriculum

Example
Organising area: Reading
Learning element: Tools (skills and knowledge)
Learning stage: Second
Learning objective: **"*I can select and use a range of strategies and resources before I read, and as I read, to make meaning clear and give reasons for my selection*".**

An additional example in the original schematic form can be found in Appendix 1[29]

Mathematics *These are elements which all learners must experience during their time in primary and secondary school.*			
The curriculum for Mathematics is divided in three organising areas.	**Number, money and measure**	**Shape, position and movement**	**Information handling**
Learning elements	Estimation and rounding Number and number processes Multiples, factors and primes Powers and roots Fractions, decimal fractions and percentages Money Time Measurement Mathematics – its impact on the world, past, present and future Patterns and relationships Expressions and equations	Properties of 2D shapes and 3D objects Angle, symmetry and transformation	Data and analysis Ideas of chance and uncertainty

[29] From: http://www.educationscotland.gov.uk/Images/literacy_english_experiences_outcomes_tcm4-539867.pdf p. 2

The pupils' progress through these 3x5 organising elements are measured by the five learning stages. A pupil's progress in mathematics in the three organising areas, in the five learning elements, and through the five learning stages, is measured in competences.

Example
Organising area: Number, money and measurement
Learning element: Money
Learning stage: Fourth
Learning objective: ***"I can source information on earnings and deductions and use it when making calculations to determine net income".***

An additional example in the original schematic form can be found in Appendix 2[30].

As described earlier, Literacy, Numeracy and Health and Wellbeing are cross curricula focus areas and there have been produced Experiences and Outcomes especially for these three areas. Furthermore, as described, the eight curriculum areas might cover more than one subject (e.g. Sciences, which covers Biology, Physics and Chemistry). There are only produced Experiences and Outcomes for Sciences as a whole - as opposed to National Qualifications, which are produced for each individual subject.

Advantages and disadvantages of different approaches to the work with curricula
As touched upon above, the autonomy the curriculum grants schools, and the fact that numeracy and literacy is integrated into other subjects, provides teachers with the ability to plan classes which capture the interests of the pupils they have, and allows them to integrate subjects, i.e. current affairs in numeracy and literacy. This is believed to motivate pupils. Still, not all teachers are equally excited: "*There are differences in opinions on how helpful the curricula are for everyday planning. Some teachers like it, and others do not like the new techniques. But many people find it useful*" said one expert. He continued to explain some of the problems associated with the Curriculum: "*There is still a lack of guidance on how you are supposed to assess curricula. This is a main criticism. Are the curricula useful at all if you do not know how to assess it?*" He and another of the other experts emphasises the importance of teachers understanding and engaging with the curriculum if the potential of the CfE is to be used[31].

4.3.2 Learning objectives

Learning objectives in Scotland
The learning objectives (goals and guidelines) in CfE refer both to the overall curriculum (the four overriding purposes), the curriculum areas (the five learning stages, Experiences and Outcomes + Principles for Practise for the eight curriculum areas) and each subject (National Qualifications). Guidelines for content of the teaching are described in Principles for Practise (See CfE Model in 4.1).

Learning objectives for Literacy, Numeracy and Health and Wellbeing is believed to be of such importance that individual learning objectives (Experiences and Outcomes) for these areas have been developed and must be integrated with all other curriculum areas/courses.

There are learning objectives for teaching across classes. Numeracy, Literacy and Health and Wellbeing are areas which are in focus across the entire curriculum and thus learning objectives for these three are relevant across classes.

In each curriculum area, Experiences and Outcomes set out a framework in which the expected competencies of the pupils are placed in relation to the five earlier described learning stages. Thus the progress of each pupil can be followed and detailed.

[30] From: http://www.educationscotland.gov.uk/Images/literacy_english_experiences_outcomes_tcm4-539867.pdf p.

[31] Pr. Donaldson has carried out the report "Teaching Scotland's Future - Report of a review of teacher education in Scotland" (2010), concerning the need for the teachers' education to match the demands the CfE places on teachers. The report can be found here: http://www.scotland.gov.uk/Resource/Doc/337626/0110852.pdf

Overview of all learning objectives

Class level	Learning objectives native language	Learning objective: Mathematics
1 (P1)	*Listening and talking* *Reading* *Writing*	***Competences at learning stage Early*** *Number, money and measures: Developing sense of size and amount.* *Shape, position and movement* *Information handling* ***I.e.: "I have explored a variety of ways in which data is presented and can ask and answer questions about the information it contains".***
2 (P2)	*Listening and talking* *Reading* *Writing*	*Number, money and measures* *Shape, position and movement* *Information handling*
3 (P3)	*Listening and talking* *Reading* *Writing*	*Number, money and measures* *Shape, position and movement* *Information handling*
4 (P4)	*Listening and talking* *Reading* *Writing*	***Competences at learning stage First*** *Number, money and measures* *Shape, position and movement* *Information handling*
5 (P5)	*Listening and talking* *Reading* *Writing*	*Number, money and measures* *Shape, position and movement* *Information handling*
6 (P6)	*Listening and talking* *Reading* *Writing*	*Number, money and measures* *Shape, position and movement* *Information handling*
7 (P7)	*Listening and talking* *Reading* *Writing*	***Competences at learning stage Second*** *Number, money and measures* *Shape, position and movement* *Information handling*
8 (S1)	*Listening and talking* *Reading* *Writing*	*Number, money and measures* *Shape, position and movement* *Information handling*
9 (S2)	*Listening and talking* *Reading* *Writing*	*Number, money and measures* *Shape, position and movement* *Information handling*
10 (S3)	*Listening and talking* ***I.e.: "To help me develop an informed view, I can identify some of the techniques used to influence or persuade and can assess the value of my sources".*** *Reading* *Writing*	***Competences at learning stage Third and fourth*** *Number, money and measures* *Shape, position and movement* *Information handling*
11 (S4)		***Competences at learning stage Senior phased (introduced in S4 runs until S6)*** *Number, money and measures* *Shape, position and movement* *Information handling*

4.4 Linkage of learning objectives in pre-school and in youth education

This section gives a description of the linkage of learning objectives for primary and secondary school to learning objectives for pre-school and youth education after lower secondary education.

4.4.1 Pre-school

National learning objectives for pre-schools

As touched upon above, the CfE has five competence levels, and the Early Level of CfE encompasses both pre-school and Primary 1. This means that pre-school and Primary 1 are looked upon as an integrated phase working with the same learning objectives. The purpose of this is to promote more continuity between the two sectors and thereby improving the transition between pre-school and school[32].

The curriculum areas and learning objectives for the Early Level of CfE are the same as described above. In the table below they are described in greater detail:[33]

Curricula area	Example of learning objective / experiences and outcome statement
Expressive art	I have the freedom to discover and choose ways to create images and objects using a variety of materials
Health and well-being	I am learning to move my body well, exploring how to manage and control it and finding out how to use and share space
Languages	I enjoy exploring and playing with the patterns and sounds of language and can use what I learn
Mathematics	I have explored numbers, understanding that they represent quantities, and I can use them to count, create sequences and describe order
Religious and moral education	As I play and learn, I am developing my understanding of what is fair and unfair and the importance of caring for, sharing and co-operating with others
Sciences	I have observed living things in the environment over time and I am becoming aware of how they depend on each other
Social Studies	I have explored how people lived in the past and have used imaginative play to show how their lives were different from my own and the people around me
Technologies	I explore software and use what I learn to solve problems and present my ideas, thoughts, or information

Besides the learning objectives for the 8 separate curricula areas, the Early Level also has learning objectives for literacy, numeracy and health and wellbeing which crosses the 8 curricula areas.

Schools' knowledge on children's abilities / scores

It is up to the Local Authorities to provide practical guidance on what information should be shared between pre-schools and primary schools and how this is to be handled practically. Information can, for example, be shared by creating a profile recording the child's progression in relation to learning objectives, which could be passed on and continued from pre-school to Primary 1[34].

Admittance and school start

In Scotland, schools do not conduct admittance tests. Children start school August of, or following, their fifth birthday. Parents of children born between September and December can request to defer their child's entry a year. These deferrals have to be approved by the local education authority. Deferrals for children born in January and February are automatically approved. Parents and children have the opportunity to attend introduction events at schools, where it is possible to meet teachers.

[32] http://www.scotland.gov.uk/Topics/People/Young-People/Early-Years-and-Family/Pre-school

[33] http://www.educationscotland.gov.uk/Images/all_experiences_outcomes_tcm4-539562.pdf

[34] http://www.educationscotland.gov.uk/Images/EYTransitions_tcm4-630848.pdf

4.4.2 Youth education

As described earlier secondary school includes 4 compulsory years (S1-S4) and 2 optional years (S5-S6). The 2 optional years can be seen as corresponding to the Danish Gymnasium, as the exams taken at levels S5 and S6 serves as qualifiers needed to attend university[35].

Learning objectives in native language and mathematics for pupils ending lower secondary school

In the CfE there are specified national expectations of learning and progression up until the fourth curriculum level which includes S1 to S3. For the last level of CfE – the senior phase (S4-S6) – there are no specified national expectations in the Experiences and Outcomes document. For the fourth curriculum level there are 31 statements describing the national expectation of learning connected to the curricula area Literacy and English. For the curricula area of Mathematics there are 34 learning statements for the fourth level of CfE. The learning objectives for both native language and mathematics for the fourth level are included in the appendix section of the report.

Admittance criteria

There are no admittance criteria when pupils move from primary school to secondary school. The only factor which impacts which secondary school a pupil attends is which geographical area they belong to. Everyone is offered a place at secondary school. There may be cases in which pupils do not wish to attend their local secondary school, if that is the case, they can apply directly to a different school.

Learning objectives in youth education

From the early years up until the Fourth Level the goal is to provide a broad general education based on the learning objectives specified in CfE's Experiences and Outcomes. The broad general education up until The Fourth Level of CfE is supposed to prepare the pupils for the Senior Phase. In this phase the pupils will work on achieving formal qualifications appropriate for the individual need. These qualifications will prepare the pupils for further study or employment and are referred to as National Qualifications (see CfE Model, section 4.1). The National Qualifications cover hundreds of different subjects, both traditional and new. It is a matter for local authorities and schools to decide what subjects they wish to provide and for how many hours. The Scottish Qualifications Authority is responsible for managing National Qualifications, and decides what is required of a pupil in order to pass a given qualification.

The learning objectives of the Fourth Level of CfE have been designed so that the level of achievement approximates the Scottish Credit and Qualifications Framework's (SCQF) level 4[36].

This leads up to S5 where pupils have the possibility to study their Highers. Highers are the qualification needed for entry into university or college to study for either degrees or Higher National Courses (HNCs and HNDs). Higher National Courses are vocational Education. Another type of vocational education is the SVQs. The lowest SVQ corresponds to Level 4 of SCQF which is the level pupils are at after they end S4. In the final year of secondary school (S6) pupils have the possibility to take Advanced Highers. These are not needed to get into university but gives additional qualifications compared to Highers[37].

Youth education schools and monitoring pupils' abilities

As described above, S3 marks the end of the broad general education where the pupils transition into the senior phase. To help this transition, mandatory S3-profiles are to be produced, describing each pupil's achievements. Profiles are produced by the pupil and give an opportunity to articulate their learning and achievements to others. These profiles are however primarily aimed at the pupils themselves and their parents[38]. Another tool used to inform schools and parents about the pupil's abilities are reports.

---

[35] http://www.educationscotland.gov.uk/scottishschoolsonline/examguide.asp

[36] (http://www.educationscotland.gov.uk/Images/all_experiences_outcomes_tcm4-539562.pdf)

[37] A detailed overview of this can be found here: http://www.sqa.org.uk/sqa/files_ccc/B63338_SQA_A6_ready%20reckoner.pdf

[38] http://www.educationscotland.gov.uk/learningteachingandassessment/assessment/achievement/profiling/aboutprofiling/whatisaprofile.asp

Reports give feedback to the pupil about learning and progression, and it can be used as a discussion between pupil and teachers about how they can be supported in their next learning steps. Schools have the flexibility to decide the format of the written reports. Reporting comprises activities including written reports, children presenting learning to their parents, parents' consultation meeting and on-going oral discussions[39].

National requirements in quantitative and qualitative terms
In relation to the CfE, Scotland has a Framework called 16+ Learning Choices. This framework guarantees an offer of a place in post 16 learning for every eligible young person who wants it. It covers all pupils within the Senior Phase who are eligible to leave compulsory education, but particular attention is given to vulnerable young people. The offer will be placed in advance of their planned date for leaving school. It will include staying in school; attending college or university; taking part in a National Training Programme; learning in a community learning and development or third sector setting, including with an Activity Agreement; volunteering and employment. The offer must be appropriate to their needs and aspirations: so it must be at the right level; accessible both in terms of location and local labour market opportunity; and delivered through the right learning method[40].
Admission into secondary school is devolved to local authorities[41].

4.5 Curriculum and learning objectives supporting teaching, planning, evaluation, and involvement of parents and pupils

This section describes Scotland's approach to the evaluation of the use of curriculum and learning objectives in planning of teaching.

4.5.1 Support of teachers' teaching, planning and evaluation

Teacher support
The Experiences and Outcomes of the CfE are meant to work as a basis for the planning and evaluation of each teacher's practise, supported by the Principles and Practise. The framework is less detailed and prescriptive than previous curriculum advice, and is supposed to provide more professional space for teachers and other staff to use in order to meet varied needs of the pupils[42]. In connection to the use of Experiences and Outcomes a practical online tool is available for teachers. This tool is called 'My Experiences and outcomes'. The tool is designed to help the teachers plan and monitor learning. It allows the teachers to browse through experiences and outcomes within and across curriculum areas, and save and group outcomes and add notes to them. This can help teachers track progress in their teaching and plan next steps[43].

The Scottish Government has, in collaboration with other national partners, education authorities and practitioners also developed another national online resource called The National Assessment Resource (NAR). The purpose of this resource is to provide support for a single coherent assessment system through which understanding and professional practice in assessment and standards and expectations for CfE will be developed and shared. It includes examples of practice which illustrate how teachers are interpreting the outcomes and expectations set out in the CfE. All examples have gone through a process of national quality assurance. NAR also includes specific literacy and numeracy assessment task material which practitioners can use and adapt as they see fit in their teaching[44].

Besides Mathematics and Language being separate curriculum areas, the CfE also makes Literacy and Numeracy a responsibility for all practitioners. This means that all teachers across curricula areas have to work with the experiences and outcomes for literacy and numeracy.

---

[39] http://www.educationscotland.gov.uk/Images/CfEReportingdocument_tcm4-612845.pdf

[40] http://www.educationscotland.gov.uk/Images/CfEReportingdocument_tcm4-612845.pdf

[41] http://www.matching-in-practice.eu/index.php/matching-in-practice/secondary-schools/scotland

[42] http://www.educationscotland.gov.uk/thecurriculum/howisthecurriculumorganised/experiencesandoutcomes/index.asp

[43]

[44] http://www.educationscotland.gov.uk/Images/BtC5Framework_tcm4-653230.pdf and http://www.educationscotland.gov.uk/learningteachingandassessment/assessment/supportmaterials/nar/assessmentmaterials/index.asp

Evaluation practice and tools

Each year Education Scotland conducts an inspection and review on the quality of education in a sample including pre-school centres, primary schools and secondary schools. The inspections are done by HM Inspectors. The evaluation uses indicators presented in the document 'How good is our School?'[45]. This document is also used as a tool for self-evaluation carried out by the schools themselves.

The indicators are arranged under 6 questions:
What outcomes have we achieved?
How well do we meet the needs of our school community?
How good is the education we provide?
How good is our management?
How good is our leadership?
What is our capacity for improvement?

In 'How good is our school?' it is specified that some aspects within these questions are useful to look at every year, while others can be inspected more closely every now and then[46].

As touched upon previously, Education Scotland and the HM Inspectors also have a role in evaluating the effectiveness of the Local Authority in its quality assurance of educational provision and support to schools in improving quality. However, instead of doing inspections of the local authorities, Validated Self-evaluation (VSE) is used.

In addition to using PISA, the Scottish Survey of Literacy and Numeracy (SSLN) is used to indicate levels of quality and profession in pupil learning. SSLN is a national sample based survey which monitors the performance in literacy and numeracy in alternate years in P4, P7 and S2. The first numeracy survey took place in May 2011 and the first literacy survey in May 2012. Besides the literacy and numeracy tasks, the SSLN also had questionnaires for both pupils and teachers. The pupils were asked about factors that are likely to affect learning such as the pupils' attitudes and experience in class. The teachers were asked about how they are implementing the experiences and outcomes of CfE. A majority of schools are involved in the survey each year. Pupils are chosen randomly by the Scottish Government's Education Analytical Services[47].

Scotland also has what is called Standard Tables and Charts (STAC). STAC is a benchmarking and self-evaluation publication which allows for internal and external benchmarking of data attained by SQA across schools and local educations authorities. This tool allows over time monitoring of the performance in National Qualifications[48].

Teachers have to self-evaluate as part of the Continuing Professional Development (CPD) scheme, which is an entitlement and expectation of all teachers in Scotland[49]. The CPD includes that teachers have to maintain a Professional Review and Development Profile. This profile should include both a plan over development objectives and a record of previous development activities. The aim of this review is to make sure that teachers are thoroughly prepared for their duties, but it also works as a quality assurance strategy used in schools[50].

[45] http://www.educationscotland.gov.uk/inspectionandreview/about/index.asp

[46] http://www.educationscotland.gov.uk/Images/HowgoodisourschoolJtEpart3_tcm4-684258.pdf

[47] http://www.educationscotland.gov.uk/learningteachingandassessment/assessment/ssln/aboutssln/aboutssln.asp

[48] https://www.scotxed.net/Public%20Documents/Benchmarking.aspx

[49] http://www.educationscotland.gov.uk/resources/c/clpl/ clpl.asp?strReferringChannel=resources&strReferringPageID=tcm:4-732517-64

[50] http://www.scotland.gov.uk/Resource/Doc/47176/0023871.pdf

4.5.2 Involving parents and pupils

To secure the delivery of the Experiences and Outcomes of each curricula area, it is seen as important that schools form partnerships with parents[51]. This is reflected in the Scottish Schools Parental Involvement Act which was passed by the Scottish Parliament in May 2006.

Additionally, a communication toolkit has been developed to help teachers talk to parents about the CfE[52]. The toolkit includes ready-made materials which addresses what CfE means at different educational stages. Examples of these ready-made materials are CfE fact files, which gives an overview of key terms and features and fact files for Numeracy and Literacy across learning. The fact files about Numeracy and Literacy across learning includes suggestions on how parents can help their child develop these skills[53].

The Experiences and Outcomes for the curricula area Mathematics do not include a similar learning objective about enjoyment and choice. However, involving pupils in their own learning is mentioned in other places in relation to the CfE. In the framework for learning and teaching presented in Curriculum for Excellence – Building the Curriculum 3[54] it is outlined that every pupil is entitled to personal support to enable them to:

Review their learning and plan for next steps
Gain access to learning activities which will meet their needs
Plan for opportunities for personal achievement
Prepare for changes and choices and be supported through changes and choices.

The support can come from both parents and teachers, and other staff involved in the pupils learning process. These entitlements aims to ensure that pupils learn as much as possible, but they also give the pupil a role in their own learning process.

4.6 The use of ICT[55] supported teaching and digitalized learning objectives

This section focuses on the use of IT supported teaching in schools to give a brief overview of the use of IT supported teaching and how the country specifically is working with digitalized learning objectives.

Nation-wide approaches to IT in native language and mathematics

ICT (IT) is recognised as very important in all aspects of learning in the CfE. One of the overall learning goals described in Experiences and Outcomes for Technology, incl. ICT, is that it should "Broaden my [the pupil's] awareness of how ideas in mathematics and science are used in engineering and the technologies"[56].

In 2007, HM Inspectorate of Education conducted a report on the potential of ICT in education, *Improving Scottish education - ICT in learning and teaching*[57]. This report includes an analysis of the impact of ICT on learning and teaching. Interesting key findings of this analysis were[58]:

[51] http://www.educationscotland.gov.uk/learningteachingandassessment/partnerships/ engagingparents/whygetparentsinvolved/index.asp

[52] http://www.educationscotland.gov.uk/learningteachingandassessment/partnerships/engagingparents/toolkit/materials/index.asp

[53] http://www.educationscotland.gov.uk/learningteachingandassessment/partnerships/engagingparents/toolkit/materials/factfiles.asp

[54] http://www.educationscotland.gov.uk/images/building_the_curriculum_3_jms3_tcm4-489454.pdf

[55] In Scotland, IT is reffered to as ICT

[56] http://www.educationscotland.gov.uk/Images/technologies_experiences_outcomes_tcm4-539894.pdf p.1

[57] http://www.educationscotland.gov.uk/inspectionandreview/Images/iseictilat_tcm4-712782.pdf

[58] http://www.educationscotland.gov.uk/inspectionandreview/Images/iseictilat_tcm4-712782.pdf PP. 49-56.

Strengths	Aspects for improvement
• There is a clear link between appropriate and effective use of ICT in learning and teaching and increased learner motivation and engagement. • There is improved learning across a range of subjects through use of ICT. • Improved willingness to write, especially among boys. • Progress in problem solving in mathematics (Primary)/improved learner performance in the solution of mathematical equations (Secondary). • A learner with additional support needs benefits notably from the use of ICT in learning and teaching. • Learners' use of ICT broadens and deepens their learning. • The impact of ICT on learners' development of wider skills is evident	• The impact of ICT in terms of progress and outcome is less clear – HMIE did not find evidence of increased attainment, in formal qualifications or against nationally defined levels that could be directly attributed to the use of ICT in learning and teaching. • Schools lack effective arrangements to identify the impact of ICT on learner attainment. • Very few centres have carried out a comprehensive or systematic evaluation of the extent of improvements in learner motivation and engagement through use of ICT. • Establishments do not consistently and comprehensively have in place all the elements necessary for learning and teaching to undergo transformation through effective use of ICT. • Although there is extensive and intensive use of ICT in all sectors, very little of this use of ICT has transformed learning and teaching.

ICT-supported teaching is a major area of focus in CfE. Scotland has the world's first national school intranet, called Glow. Glow allows pupils and teachers to create a personal user account. Through this account, pupils and teachers can create interest based groups, share documents, send messages/ mails, have video correspondences, participate in virtual learning etc. Glow also allows parents to create an account and take use of many of the services Glow offers, as well as getting an overall understanding of what the school and CfE offers and asks of their child. Glow was developed as an integrated part of CfE, and the correspondence between the two are therefore an integrated part of Glow[59]. A selection of digital learning resources is available through Glow.

CfE emphasises the use of technologic resources in teaching. Game based learning (i.e. computer games) is promoted and a game based learning initiative, The Consularium, has been established in order to support teachers in facilitating game based teaching and learning (see following section for more about game based learning).

[59] http://www.educationscotland.gov.uk/usingglowandict/glow/whatis/index.asp

Technologies, incl. ICT, are one of the eight curriculum areas and therefor have its own set of Experiences and Outcomes as well as National Qualifications linked to it[60].

Computing science contexts for developing technological skills and knowledge (continued)				
Early	**First**	**Second**	**Third**	**Fourth**
I am developing problem-solving strategies, navigation and co-ordination skills, as I play and learn with electronic games, remote control or programmable toys. **TCH 0-09a / TCH 1-09a**		Using appropriate software, I can work collaboratively to design an interesting and entertaining game which incorporates a form of control technology or interactive multimedia. **TCH 2-09a**	Using appropriate software, I can work individually or collaboratively to design and implement a game, animation or other application. **TCH 3-09a**	By learning the basic principles of a programming language or control technology, I can design a solution to a scenario, implement it and evaluate its success. **TCH 4-09a** I can create graphics and animations using appropriate software which utilise my skills and knowledge of the application. **TCH 4-09b** I can use features of software to create my own animation which can then be used to create an animated sequence. **TCH 4-09c**

Tools and guidelines for digitalized learning

As mentioned above, the digitalized learning objectives are a part of an overall ICT-strategy as well as a part of the eight curriculum areas, as Technologies is one of these. Therefore, the learning objectives for digital learning are supported by the same range of tools and guidelines as other areas – Experiences and Outcomes, National Qualifications and Principles and Practise. Additionally, as mentioned above, a game based learning initiative called The Consularium has been developed in order to support teachers in facilitating game based teaching and learning. Furthermore, a whole selection of game design tools and programs is available on the CfE website which pupils and teachers can use to integrate the game based learning in the teaching[61]. A broad range of overall support material – i.e. suggestions for tasks for pupils to do, opportunities to take part in activities arranged by external operators etc. – is available through the CfE website as well[62].

[60] http://www.educationscotland.gov.uk/Images/technologies_experiences_outcomes_tcm4-539894. pdf p. 7.

[61] http://www.educationscotland.gov.uk/usingglowandict/gamesbasedlearning/gamedesign/index.asp

[62] http://www.educationscotland.gov.uk/learningteachingandassessment/curriculumareas/technologies/supportmaterials/resources/index.asp.

Annex
Providing documentation

Reports used:
Besley, A.C. (2002), Into the 21st Century: The McCrone and McConnell Reports – Opening the Possibility for Introducing Full-time School Counsellors into Scottish Schools, Scottish Educational Review, v34 n1 p.61-75, http://www.ser.stir.ac.uk/pdf/145.pdf

British Council (xxxx), The Education System of England & Wales, Scotland and Northern Ireland, http://www.britishcouncil.org/flasonline-uk-education-system.pdf
Cunningham, Ken (2011) Increasingly separate: Scotland's school system, Teaching Times Vol. 3.4/5, www.teachingtimes.com

Draper, Janet & Sharp, Stephen (2006), Continuity or change? The initial impact of the post-McCrone agreement, Scottish Educational Review, 37. 99-112, http://www.ser.stir.ac.uk/pdf/229.pdf

Donaldson, Graham (2010), Teaching Scotland's Future - Report of a review of teacher education in Scotland. http://www.scotland.gov.uk/Resource/Doc/337626/0110852.pdf

Eurydice (2007), School Autonomy in Europe. Policy and Measures, http://eacea.ec.europa.eu/education/Eurydice/documents/thematic_reports/090EN.pdf

HM Inspectorate of Education (2002) Count us In: Achieving inclusion in Scottish Schools, www.scotland.gov.uk/hmie

HM Inspectorate of Education (2007), How good is our school?, http://www.educationscotland.gov.uk/Images/HowgoodisourschoolJtEpart3_tcm4-684258.pdf

HM Inspectorate of Education (2007), Improving Scottish Education: ICT in learning and teaching, http://www.educationscotland.gov.uk/inspectionandreview/Images/iseictilat_tcm4-712782.pdf

HM Inspectorate of Education (2007), Kaimes School, http://www.educationscotland.gov.uk/Images/KaimesSchoolIns20070426_tcm4-696818.pdf

HM Inspectorate of Education (2011), Principles of inspection and review, http://www.educationscotland.gov.uk/Images/PrinciplesofInspectionandReview2010_tcm4-683703.pdf
Learning and Teaching Scotland (2010), Curriculum for excellence: Pre-school into primary transitions, http://www.educationscotland.gov.uk/Images/EYTransitions_tcm4-630848.pdf

Manlove, David (2012), Matching Practices for Primary and Secondary Schools – Scotland, http://www.matching-in-practice.eu/index.php/matching-in-practice/secondary-schools/scotland,
ScotXed, Standard Tables and Charts (STACs), OECD (2010), Programme for International Pupil Assessment (PISA) 2009. Highlights from Scottish results, http://www.scotland.gov.uk/Publications/2010/12/10141122/0

Humle, Moira, Vivienne Baumfield, Kay Livingston & Ian Menter (2009) Glasgow University, http://www.leeds.ac.uk/educol/documents/187593.pdf

Opertti, Renato & Brady, Jayne (2010), Moving forward with secondary education reform: issue, challenges and proposals, http://www.ibe.unesco.org/fileadmin/user_upload/COPs/News_documents/2010/1003Oman/Mov_Forward_2ndEd_EFA.pdf

Scottish Executive Education Department (2001) A Teaching Profession for the 21st Century. Agreement reached following the recommendations of the McCrone report.

Scottish Executive (2002), Professional Review and Development, http://www.scotland.gov.uk/Resource/Doc/47176/0023871.pdf
Scottish Executive (2006), Scottish schools (parental involvement) act 2006: guidance, http://www.scotland.gov.uk/Resource/Doc/148166/0039411.pdf

Skolestyrelsen, Hovedresultater fra PISA 2009, http://uvm.dk/Uddannelser-og-dagtilbud/Folkeskolen/De-nationale-test-og-evaluering/Internationale-evalueringer/PISA/~/media/UVM/Filer/Udd/Folke/PDF11/110920_hovedresultater_PISA_2009.ashx.ashx

The Scottish Government (2008), Curriculum for excellence: Building the curriculum 3: A framework for learning and teaching, Edinburgh, http://www.educationscotland.gov.uk/images/building_the_curriculum_3_jms3_tcm4-489454.pdf

The Scottish Government (2010), Curriculum for excellence: Building the curriculum 5: A framework for assessment: Reporting, Edinburgh, http://www.educationscotland.gov.uk/Images/CfEReportingdocument_tcm4-612845.pdf

The Scottish Government (2010), 16+ Learning Choices: Policy and Practice Framework: Supporting all young people into positive and sustained destinations, http://www.scotland.gov.uk/Resource/Doc/308354/0097118.pdf

The Scottish Government (2011), Curriculum for excellence: Building the curriculum 5: A framework for assessment, Edinburgh, http://www.educationscotland.gov.uk/Images/BtC5Framework_tcm4-653230.pdf

The Scottish Government (2011), Pre-schools, Pupils and Teachers, Summary Statistics for Schools in Scotland, No. 2, 2011, http://www.scotland.gov.uk/Publications/2011/12/06114834/4

The Scottish Government (2012), Chapter 3 School Choice, School Characteristics and moving schools, in Growing Up in Scotland Early Experiences of Primary School, http://www.scotland.gov.uk/Publications/2012/05/7940/5

The Scottish Government (2012), Summary Statistics for Schools in Scotland, No. 3: 2012 Edition, http://www.scotland.gov.uk/Publications/2012/12/2355/15

The Scottish Government, HMIe, SQA & Learning and Teaching Scotland, (2012), A guide for practitioners, CfE Briefing 3: Curriculum for Excellence: Profiling and the S3 profile, http://www.educationscotland.gov.uk/Images/CfEBriefing3_tcm4-731977.pdf

The Scottish Government, HMIe, SQA & Learning and Teaching Scotland, Curriculum for excellence, http://www.educationscotland.gov.uk/Images/all_experiences_outcomes_tcm4-539562.pdf

The Scottish Government, HMIe, SQA & Learning and Teaching Scotland , Curriculum for excellence: Literacy and English: experiences and outcomes, http://www.educationscotland.gov.uk/Images/literacy_english_experiences_outcomes_tcm4-539867.pdf

The Scottish Government, HMIe, SQA & Learning and Teaching Scotland , Curriculum for excellence: Numeracy and mathematics: experiences and outcomes, http://www.educationscotland.gov.uk/Images/numeracy_mathematics_experiences_outcomes_tcm4-539878.pdf

The Scottish Government, HMIe, SQA & Learning and Teaching Scotland , Curriculum for excellence: technologies: experiences and outcomes, http://www.educationscotland.gov.uk/Images/technologies_experiences_outcomes_tcm4-539894.pdf

Webpages

- Creative Skillset, Vocational Qualifications in Scotland, http://www.creativeskillset.org/qualifications/vocational/article_3422_1.asp
  Education Scotland, http://www.educationscotland.gov.uk
- A broad general education, http://www.educationscotland.gov.uk/thecurriculum/whatcanlearnersexpect/broadeducation.asp

- About inspections and reviews, http://www.educationscotland.gov.uk/inspectionandreview/about/index.asp

- About profiling, http://www.educationscotland.gov.uk/learningteachingandassessment/assessment/achievement/profiling/aboutprofiling/whatisaprofile.asp

- About supporting English as an additional language, http://www.educationscotland.gov.uk/supportinglearners/additionalsupportneeds/eal/supportingeal.asp

- About the Scottish Survey of Literacy and Numeracy, http://www.educationscotland.gov.uk/learningteachingandassessment/assessment/ssln/aboutssln/aboutssln.asp

- Additional support needs, http://www.educationscotland.gov.uk/supportinglearners/additionalsupportneeds/index.asp

- Career-long Professional Learning, http://www.educationscotland.gov.uk/resources/c/clpl/clpl.asp?strReferringChannel=resources&strReferringPageID=tcm:4-732517-64

- Exam guide, http://www.educationscotland.gov.uk/scottishschoolsonline/examguide.asp

- Experiences and outcomes, http://www.educationscotland.gov.uk/thecurriculum/howisthecurriculumorganised/experiencesandoutcomes/index.asp

- Game design – resources, http://www.educationscotland.gov.uk/usingglowandict/gamesbasedlearning/gamedesign/index.asp

- Resources, http://www.educationscotland.gov.uk/learningteachingandassessment/curriculumareas/technologies/supportmaterials/resources/index.asp

- Scottish Schools Online, Glossary, http://www.educationscotland.gov.uk/scottishschoolsonline/glossary.asp

- Senior phase, http://www.educationscotland.gov.uk/thecurriculum/whatcanlearnersexpect/seniorphase.asp

- My Experiences and Outcomes, http://www.educationscotland.gov.uk/myexperiencesandoutcomes/aboutthistool/usingthistool/index.asp

- National Assessment Resource assessment materials, http://www.educationscotland.gov.uk/learningteachingandassessment/assessment/supportmaterials/nar/assessmentmaterials/index.asp

- Ready-made materials, http://www.educationscotland.gov.uk/learningteachingandassessment/partnerships/engagingparents/toolkit/materials/index.asp

- Validated self-evaluation, http://www.educationscotland.gov.uk/inspectionandreview/validatedselfevaluation/index.asp
- What is Glow, http://www.educationscotland.gov.uk/usingglowandict/glow/whatis/index.asp
- What is the Curriculum for Excellence, http://www.educationscotland.gov.uk/thecurriculum/whatiscurriculumforexcellence/index.asp
- Why get parents involved?, http://www.educationscotland.gov.uk/learningteachingandassessment/partnerships/engagingparents/whygetparentsinvolved/index.asp
- PISA – Frequently asked questions, http://engageforeducation.org/news/pisa-frequently-asked-questions/
- *SQA,* http://www.sqa.org.uk/sqa//58510.3587.html
- *Curriculum for Excellence Overview,* http://www.sqa.org.uk/sqa//58510.3587.html
- *Scottish Credit and Qualifications Framework,* http://www.sqa.org.uk/sqa/4595.html
- SQA Qualifications in the Scottish Credit and Qualifications Framework, http://www.sqa.org.uk/sqa/files_ccc/B63338_SQA_A6_ready%20reckoner.pdf

The Scottish Government, http://www.scotland.gov.uk/

- Attainment, http://www.scotland.gov.uk/Topics/Education/Schools/curriculum/Attainment
- Class size, http://www.scotland.gov.uk/Topics/Education/Schools/Teaching/classes
- Curriculum, Assessment & Qualifications, http://www.scotland.gov.uk/Topics/Education/Schools/curriculum
- Demographics, http://www.scotland.gov.uk/Topics/ArtsCultureSport/arts/GaelicLanguage/Demographics
- Frequently Asked Questions, http://www.scotland.gov.uk/Topics/Education/Schools/FAQs
- Pupils – Pupil Number, http://www.scotland.gov.uk/Topics/Statistics/Browse/School-Education/TrendPupilNumbers
- Schools – Class size, http://www.scotland.gov.uk/Topics/Statistics/Browse/School-Education/TrendClassSizes

Persons interviewed:

David Beckett
Graham Donaldson
Tom MacIntyre

Appendices

Appendix 1: Listening and talking

Listening and talking					
	Early	**First**	**Second**	**Third**	**Fourth**
Enjoyment and choice – within a motivating and challenging environment, developing an awareness of the relevance of texts in my life	*"I enjoy exploring and playing with the patterns and sounds of language, and can use what I learn*[63]*"* ***LIT 0-01a / LIT 0-11a / LIT 0-20a*** *"I enjoy exploring and choosing stories and other texts to watch, read or listen to, and can share my likes and dislikes".* ***LIT 0-01b / LIT 0-11b*** *"I enjoy exploring events and characters in stories and other texts, sharing my thoughts in different ways".* ***LIT 0-01c***	*"I regularly select and listen to or watch texts which I enjoy and find interesting, and I can explain why I prefer certain sources".* *"I regularly select subject, purpose, format and resources to create texts of my choice".* ***LIT 1-01a / LIT 2-01a***		*"I regularly select and listen to or watch texts for enjoyment and interest, and I can express how well they meet my needs and expectations, and I can give reasons, with evidence, for my personal response".* *"I can regularly select subject, purpose, format and resources to create texts of my choice, and am developing my own style".* ***LIT 3-01a / LIT 4-01a***	

[63] The literacy experiences and outcomes which are the responsibility of all teachers are shown in italics.

Appendix 2: Shape, position and movement

Shape, position and movement					
	Early	**First**	**Second**	**Third**	**Fourth**
Properties of 2D shapes and 3D objects	I enjoy investigating objects and shapes and can sort, describe and be creative with them. MTH 0-16a	I have explored simple 3D objects and 2D shapes and can identify, name and describe their features using appropriate vocabulary. MTH 1-16a I can explore and discuss how and why different shapes fit together and create a tiling pattern with them. MTH 1-16b	Having explored a range of 3D objects and 2D shapes, I can use mathematical language to describe their properties, and through investigation can discuss where and why particular shapes are used in the environment. MTH 2-16a Through practical activities, I can show my understanding of the relationship between 3D objects and their nets. MTH 2-16b I can draw 2D shapes and make representations of 3D objects using an appropriate range of methods and efficient use of resources. MTH 2-16c	Having investigated a range of methods, I can accurately draw 2D shapes using appropriate mathematical instruments and methods. MTH 3-16a	I have explored the relationships that exist between the sides, or sides and angles, in right-angled triangles and can select and use an appropriate strategy to solve related problems, interpreting my answer for the context. MTH 4-16a Having investigated the relationships between the radius, diameter, circumference and area of a circle, I can apply my knowledge to solve related problems. MTH 4-16b

Appendix 3: Youth Education in Literacy and English

Literacy and English	
	Listening and talking
Enjoyment and choice	*I regularly select and listen to or watch texts for enjoyment and interest, and I can express how well they meet my needs and expectations, and I can give reasons, with evidence, for my personal response.* *I can regularly select subject, purpose, format and resources to create texts of my choice, and am developing my own style.* ***LIT 3-01a - LIT 4-01a***
Tools for listening and talking	*When I engage with others I can make a relevant contribution, ensure that everyone has an opportunity to contribute and encourage them to take account of others' points of view or alternative solutions.* *I can respond in ways appropriate to my role, exploring and expanding on contributions to reflect on, clarify or adapt thinking.* ***LIT 4-02a*** Having explored and analysed the features of spoken language, I can use these independently, adopting and sustaining an appropriate register to suit my purpose and audience. **ENG 4-03a**
Finding and using information	*As I listen or watch, I can:* • *clearly state the purpose and main concerns of a text and make inferences from key statements* • *compare and contrast different types of text* • *gather, link and use information from different sources and use this for different purposes.* ***LIT 4-04a*** *As I listen or watch, I can make notes and organise these to develop thinking, help retain and recall information, explore issues and create new texts, using my own words as appropriate.* ***LIT 3-05a - LIT 4-05a*** *I can independently select ideas and relevant information for different purposes, organise essential information or ideas and any supporting detail in a logical order, and use suitable vocabulary to communicate effectively with my audience.* ***LIT 3-06a - LIT 4-06a***
Understanding, analysing and evaluating	*I can show my understanding of what I listen to or watch by giving detailed, evaluative comments, with evidence, about the content and form of short and extended texts.* ***LIT 4-07a*** *To help me develop an informed view, I can identify some of the techniques used to influence or persuade and can assess the value of my sources.* ***LIT 4-08a***
Creating texts	*When listening and talking with others for different purposes, I can:* • *communicate detailed information, ideas or opinions* • *explain processes, concepts or ideas with some relevant supporting detail* • *sum up ideas, issues, findings or conclusions.* ***LIT 4-09a*** *I can communicate in a clear, expressive manner when engaging with others within and beyond my place of learning, and can independently select and organise appropriate resources as required.* ***LIT 4-10a***

	Reading
Enjoyment and choice	*I regularly select and read, listen to or watch texts for enjoyment and interest, and I can express how well they meet my needs and expectations and give reasons, with evidence, for my personal response.* *I can independently identify sources to develop the range of my reading.* ***LIT 4-11a***
Tools for reading	Through developing my knowledge of context clues, punctuation, grammar and layout, I can read unfamiliar texts with increasing fluency, understanding and expression. **ENG 2-12a - ENG 3-12a - ENG 4-12a** *Before and as I read, I can apply strategies and use resources independently to help me read a wide variety of texts and/or find the information I need.* ***LIT 4-13a***
Finding and using information	*Using what I know about the features of different types of texts, I can find, select, sort, summarise, link and use information from different sources.* ***LIT 3-14a - LIT 4-14a*** *I can make notes and organise them to develop my thinking, help retain and recall information, explore issues and create new texts, using my own words as appropriate.* ***LIT 3-15a - LIT 4-15a***
Understanding, analysing and evaluating	*To show my understanding across different areas of learning, I can:* • *clearly state the purpose, main concerns, concepts or arguments and use supporting detail* • *make inferences from key statements and state these accurately in my own words* • *compare and contrast different types of text.* ***LIT 4-16a*** To show my understanding, I can give detailed, evaluative comments, with evidence, on the content and form of short and extended texts, and respond to different kinds of questions and other types of close reading tasks. **ENG 4-17a** *To help me develop an informed view, I can recognise persuasion and bias, identify some of the techniques used to influence my opinion, and assess the reliability of information and credibility and value of my sources.* ***LIT 4-18a*** I can: • discuss and evaluate the effectiveness of structure, characterisation and/or setting using some supporting evidence • identify how the writer's main theme or central concerns are revealed and can recognise how they relate to my own and others' experiences • identify and make a personal evaluation of the effect of aspects of the writer's style and other features appropriate to genre using some relevant evidence and terminology. **ENG 4-19a**
	Writing
Enjoyment and choice	*I enjoy creating texts of my choice and I am developing my own style. I can regularly select subject, purpose, format and resources to suit the needs of my audience.* ***LIT 3-20a - LIT 4-20a***
Tools for writing	*I can use a range of strategies and resources independently and ensure that my spelling, including specialist vocabulary, is accurate.* ***LIT 4-21a*** *As appropriate to my purpose and type of text, I can punctuate and structure different types of sentences with sufficient accuracy, and arrange these to make meaning clear, showing straightforward relationships between paragraphs.* ***LIT 3-22a - LIT 4-22a*** *Throughout the writing process, I can review and edit my writing independently to ensure that it meets its purpose and communicates meaning clearly at first reading.* ***LIT 4-23a*** *I can justify my choice and use of layout and presentation in terms of the intended impact on my reader.*

	LIT 4-24a
Organising and using information	*I can use notes and other types of writing to generate and develop ideas, retain and recall information, explore problems, make decisions, or create original text.* *I can make appropriate and responsible use of sources and acknowledge these appropriately.* ***LIT 4-25a*** *By considering the type of text I am creating, I can independently select ideas and relevant information for different purposes, and organise essential information or ideas and any supporting detail in a logical order. I can use suitable vocabulary to communicate effectively with my audience.* ***LIT 3-26a - LIT 4-26a***
Creating texts	I can engage and/or influence readers through my use of language, style and tone as appropriate to genre. **ENG 3-27a - ENG 4-27a** *I can convey information and describe events, explain processes or concepts, providing substantiating evidence, and synthesise ideas or opinions in different ways.* ***LIT 4-28a*** *I can persuade, argue, evaluate, explore issues or express and justify opinions within a convincing line of thought, using relevant supporting detail and/or evidence.* ***LIT 4-29a*** I can create a convincing impression of my personal experience and reflect on my response to the changing circumstances to engage my reader. **ENG 4-30a** Having explored and experimented with the narrative structures which writers use to create texts in different genres, I can: • use the conventions of my chosen genre successfully and/or • create an appropriate mood or atmosphere and/or • create convincing relationships, actions and dialogue for my characters. **ENG 4-31a**

Appendix 4: Youth Education

Mathematics	
	Number, money and measure
Estimation and rounding	*Having investigated the practical impact of inaccuracy and error, I can use my knowledge of tolerance when choosing the required degree of accuracy to make real-life* calculations. ***MNU 4-01a***
Number and number processes	*Having recognised similarities between new problems and problems I have solved before, I can carry out the necessary calculations to solve problems set in unfamiliar contexts.* ***MNU 4-03a***
Powers and roots	I have developed my understanding of the relationship between powers and roots and can carry out calculations mentally or using technology to evaluate whole number powers and roots, of any appropriate number. **MTH 4-06a** Within real-life contexts, I can use scientific notation to express large or small numbers in a more efficient way and can understand and work with numbers written in this form. **MTH 4-06b**
Fractions, decimal fractions and percentages	*I can choose the most appropriate form of fractions, decimal fractions and percentages to use when making calculations mentally, in written form or using technology, then use my solutions to make comparisons, decisions and choices.* ***MNU 4-07a*** I can solve problems involving fractions and mixed numbers in context, using addition, subtraction or multiplication. **MTH 4-07b**
Fractions, decimal fractions and percentages	*Using proportion, I can calculate the change in one quantity caused by a change in a related quantity and solve real-life problems.* ***MNU 4-08a***
Money	*I can discuss and illustrate the facts I need to consider when determining what I can afford, in order to manage credit and debt and lead a responsible lifestyle.* ***MNU 4-09a*** *I can source information on earnings and deductions and use it when making calculations to determine net income.* ***MNU 4-09b*** *I can research, compare and contrast a range of personal finance products and, after making calculations, explain my preferred choices.* ***MNU 4-09c***
Time	*I can research, compare and contrast aspects of time and time management as they impact on me.* ***MNU 4-10a*** *I can use the link between time, speed and distance to carry out related calculations.* ***MNU 4-10b***
Measurement	*I can apply my knowledge and understanding of measure to everyday problems and tasks and appreciate the practical importance of accuracy when making calculations.* ***MNU 4-11a*** Through investigating real-life problems involving the surface area of simple 3D shapes, I can explore ways to make the most efficient use of materials and carry out the necessary calculations to solve related problems. **MTH 4-11b** I have explored with others the practicalities of the use of 3D objects in everyday life and can solve problems involving the volume of a prism, using a formula to make related calculations when required. **MTH 4-11c**

Mathematics – its impact on the world, past, present and future	I have discussed the importance of mathematics in the real world, investigated the mathematical skills required for different career paths and delivered, with others, a presentation on how mathematics can be applied in the workplace. **MTH 4-12a**
Patterns and relationships	Having explored how real-life situations can be modelled by number patterns, I can establish a number sequence to represent a physical or pictorial pattern, determine a general formula to describe the sequence, then use it to make evaluations and solve related problems. **MTH 4-13a** I have discussed ways to describe the slope of a line, can interpret the definition of gradient and can use it to make relevant calculations, interpreting my answer for the context of the problem. **MTH 4-13b** Having investigated the pattern of the coordinate points lying on a horizontal or vertical line, I can describe the pattern using a simple equation. **MTH 4-13c** I can use a given formula to generate points lying on a straight line, plot them to create a graphical representation then use this to answer related questions. **MTH 4-13d**
Expressions and equations	Having explored the distributive law in practical contexts, I can simplify, multiply and evaluate simple algebraic terms involving a bracket. **MTH 4-14a** I can find the factors of algebraic terms, use my understanding to identify common factors and apply this to factorise expressions. **MTH 4-14b** Having discussed the benefits of using mathematics to model real-life situations, I can construct and solve inequalities and an extended range of equations. **MTH 4-15a**
	Shape, position and movement
Properties of 2D shapes and 3D objects	I have explored the relationships that exist between the sides, or sides and angles, in right-angled triangles and can select and use an appropriate strategy to solve related problems, interpreting my answer for the context. **MTH 4-16a** Having investigated the relationships between the radius, diameter, circumference and area of a circle, I can apply my knowledge to solve related problems. **MTH 4-16b**
Angle, symmetry and transformation	Having investigated the relationship between a radius and a tangent and explored the size of the angle in a semi-circle, I can use the facts I have established to solve related problems. **MTH 4-17a** I can apply my understanding of the properties of similar figures to solve problems involving length and area. **MTH 4-17b** I can plot and describe the position of a point on a 4-quadrant coordinate grid. **MTH 4-18a** I can apply my understanding of the 4-quadrant coordinate system to move, and describe the transformation of, a point or shape on a grid. **MTH 4-18b** Having investigated patterns in the environment, I can use appropriate mathematical vocabulary to discuss the rotational properties of shapes, pictures and patterns and can apply my understanding when completing or creating designs. **MTH 4-19a**

	Information handling
Data and analysis	*I can evaluate and interpret raw and graphical data using a variety of methods, comment on relationships I observe within the data and communicate my findings to others.* ***MNU 4-20a*** In order to compare numerical information in real-life contexts, I can find the mean, median, mode and range of sets of numbers, decide which type of average is most appropriate to use and discuss how using an alternative type of average could be misleading. **MTH 4-20b** I can select appropriately from a wide range of tables, charts, diagrams and graphs when displaying discrete, continuous or grouped data, clearly communicating the significant features of the data. **MTH 4-21a**
Ideas of chance and uncertainty	*By applying my understanding of probability, I can determine how many times I expect an event to occur, and use this information to make predictions, risk assessment, informed choices and decisions.* ***MNU 4-22a***

BILAG 2
AJOURFØRTE NORDISKE LANDENOTATER

NOTAT

Projekt	**Kortlægning af fagrækker og curriculum i de nordiske skolesystemer**
Kunde	**Ministeriet for Børn og Undervisning**
Notat nr.	**1**
Dato	**11.april 2012**

1. Landnotat - Norge

Dette landnotatet er en oppdatert versjon av et landnotat utarbeidet av Rambøll Management Consulting i april 2010. Daværende notat inneholdt en systematisk gjennomgang og beskrivelse av fagsammensetning og curriculum i den norske grunnskolen på daværende tidspunkt samt tilgrensende emner for å tydeliggjøre begrunnelsen for gjeldende praksis i Norge. Notat fra 2010 var basert på eksisterende kunnskap hos Rambøll, tilgjengelige data (desk research) og telefonintervjuer med følgende nøkkelpersoner, som alle har oppdatert viten på området: Kjersti Flåthen i Kunnskapsdepartementet, Ellen Marie Bech i Utdanningsdirektoratet og Wenche Rønning, forsker i Nordlandsforskning.

Inneværende notat, som er en oppdatert versjon av notatet fra 2010, er oppdatert ved hjelp av desk studier av gjeldende læreplaner, av dokumenter knyttet til pågående revisjon av læreplaner i gjennomgående fag, og av dokumenter knyttet til evaluering av Kunnskapsløftet. Tilnærmingen er i inneværende som i forrige landnotatet beskrivende, og det er ikke foretatt vurderinger av innholdet i gjennomgåtte dokumenter.

Notatet inngår i en samlet kartlegging av ulike lands tilnærminger til fagsammensetning og pensum. Kartleggingen gjennomføres av Rambøll Management Consulting for Ministeriet for Børn og Undervisning i Danmark.

Den resterende delen av dokumentet er delt opp i følgende avsnitt:

2. Kort om norsk grunnskole etter Kunnskapsløftet
3. Styringsmodell
4. Fagsammensetningen
5. Minimumstimetall
6. Curriculum – mål og innhold
7. Vurderingspraksis
8. Erfaringer med forsøk
9. Evaluering av Kunnskapsløftet

2. Kort om norsk grunnskole etter Kunnskapsløftet

Den norske grunnskolen består av ti obligatoriske trinn. 1.-7.trinn er barnetrinnet, og ungdomstrinnet er 8. til 10. klasse. Elevene starter på skolen når de er seks år gamle. I 2011 var det registrert 3000 grunnskoler, og 172 av disse var private.[1] Disse skolene sysselsatte 73 425 lærere, som underviste til sammen 612 627 elever. Det gir en gjennomsnittlig skolestørrelse på vel 200 elever per skole og en elev/lærer-ratio på vel 8 elever per lærer. 17 817 elever mottok dette året morsmålsopplæring. [2] Driften av

[1] SSB (2013): Tabell 4 Elevar i grunnskolen og grunnskolar, etter eigeform. Skoleåra 2002/03 – 2012/2013. Tilgjengelig på http://www.ssb.no/a/kortnavn/utgrs/tab-2012-12-14-04.html

[2] SSB (2013). Det finnes på nåværende tidspunkt ikke tall på antall lærere for skoleåret 2012/2013, derfor er 2011 valgt.Tabeller generert fra Statistikkbanken (https://www.ssb.no/statistikkbanken/SelectVarVal/Define.asp?subjectcode=17&ProductId=17.02&MainTable=Kostra3K9962&SubTable=Kommun1&PLanguage=0&nvl=True&Qid=0&gruppe1=Hele&gruppe2=Hele&VS1=KommunKostra2012&VS2=&mt=0&KortNavnWeb=utgrs&CMSSubjectArea=&StatVariant=&checked=true). Det finnes på nåværende tidspunkt ikke tall på antall lærere for skoleåret 2012/2013, derfor er 2011 valgt.

den norske grunnskolen er forankret i *Lov om grunnskolen og den vidaregåande opplæringa (opplæringslova)* av 1998 og *Forskrift til opplæringslova* av 2006.

Grunnskolen har gjennomgått vesentlig endringer de siste årene ettersom den fikk ny styringsmodell i 2006 da reformen "Kunnskapsløftet" ble iverksatt. Bakgrunnen for reformen var en lengre politisk diskusjon der det blant annet ble hevdet at fokuset på kunnskap ikke var stort nok i den norske grunnskolen.[3] Kunnskapsløftet er både en innholdsreform med økt fokus på grunnleggende ferdigheter og en styringsreform som vektlegger økt lokal frihet i forhold til organiseringen av skoletilbudet. Kunnskapsløftet har medført en rekke endringer i innholdet i skolen. Ifølge Kunnskapsdepartementet er de viktigste endringene følgende:

- Grunnleggende ferdigheter styrkes
- Lese- og skriveopplæring vektlegges fra første årstrinn
- Nye læreplaner i alle fag, med tydelige mål for elevenes og lærlingenes kompetanse
- Ny fag- og timefordeling
- Ny tilbudsstruktur i videregående opplæring
- Lokal valgfrihet når det gjelder arbeidsformer, læremateriell og organisering av opplæringen[4]

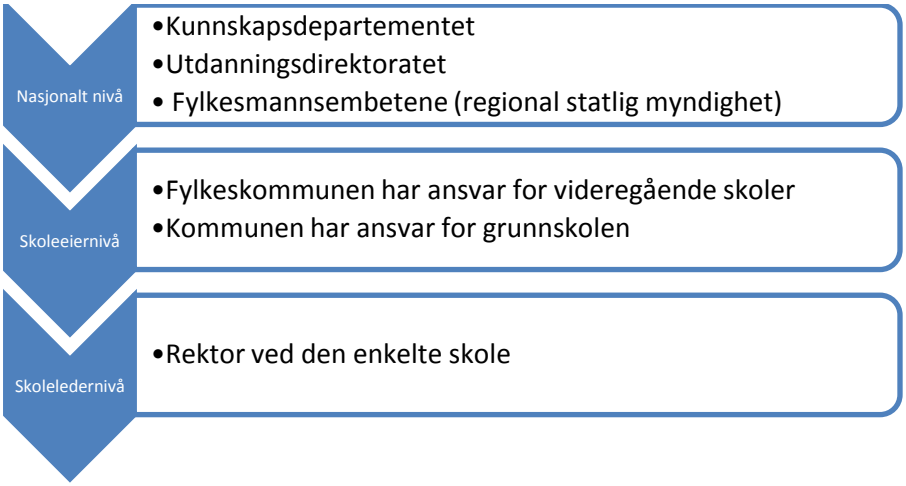
Den norske grunnskolen kjennetegnes av desentralisering og økt lokalt handlingsrom. Læreplanene er utarbeidet på nasjonalt nivå. De har status som forskrifter, og er således forpliktende for skoleeiere. Kompetansemålene beskriver nasjonale forventninger til hva eleven skal mestre etter endt opplæring. De nasjonale læreplanene forutsetter konkretisering og operasjonalisering gjennom et lokalt læreplanarbeid. Intensjonen med dette er å tilrettelegge for en opplæring tilpasset lokale variasjoner og behov.

3. Styringsmodell

Figur 1 under illustrerer aktørene i styringskjeden i norsk grunnopplæring.

[3] Intervju med informant til kartleggingen.
[4] Kunnskapsdepartementet: *Hva er kunnskapsløftet?* URL: http://www.regjeringen.no/nb/dep/kd/tema/grunnopplaring/kunnskapsloeftet/hva-er-kunnskapsloftet.html?id=86769

Figur 1: Aktørene i styringskjeden



På nasjonalt nivå opererer Kunnskapsdepartementet og dets underliggende etat, Utdanningsdirektoratet. Kunnskapsdepartementet har ansvar for utdanningssektoren som helhet, men ansvaret for utvikling av barnehager, grunn- og videregående opplæring er delegert til Utdanningsdirektoratet. Utdanningsdirektoratets oppgave er derfor å omforme utdanningspolitikk for barnehager og grunn- og videregående opplæring til mer konkrete handlingsplaner.[5] På skoleeiernivå finner vi fylkeskommunene og kommunene, som har ansvar for henholdsvis videregående opplæring og grunnskoleopplæring. På skoleledernivå finner vi øverste leder ved den enkelte skole, som i de fleste tilfeller vil være rektor. Nedenfor vil vi gå nærmere inn på ansvarsområdene og arbeidsoppgavene til de ulike aktørene i styringskjeden. Vi vil ikke gjøre nærmere rede for oppgavene til fylkeskommunen[6], ettersom dette notatet kun omhandler grunnskolen.

Kunnskapsdepartementet
Kunnskapsdepartementet har et overordnet ansvar for nasjonal utdanningspolitikk. Av lovene som er tilknyttet Kunnskapsdepartementets ansvarsområde, er Lov om grunnskolen og den vidaregåande opplæringa av 17. juli 1998 nr. 61 (opplæringsloven) og den tilhørende Forskrift til opplæringslova av 1. august 2006 relevante for temaet i dette notatet.

Utdanningsdirektoratet
Utdanningsdirektoratet er underlagt Kunnskapsdepartementet. Det har en rekke oppgaver som hører til temaet for dette notatet. Disse er:

- Ansvar for at det blir ført tilsyn med
- Ansvar for utarbeiding og forvaltning av læreplanverket
- Ansvar for fag- og timefordeling

Nedenfor vil vi redegjøre mer detaljert for hvert av disse ansvarsområdene.

Ved innføringen av kunnskapsløftet i 2006 fikk skolene større handlingsrom og anledning til tilpasse undervisningen til lokale behov. Samtidig med dette ble tilsynsordningen intensivert. Direktoratet har ansvar for at det blir ført tilsyn med

[5] PIRLS: *Pirls 2006 Encyclopedia.* URL: http://timss.bc.edu/PDF/P06Encyclopedia.pdf
[6] Fylkeskommunen er det regionale forvaltningsnivået som ligger mellom stat og kommune.

skoleeierne. Det er fylkesmannsembetene, den statlige regionale myndighet, som fører nasjonal tilsyn på oppdrag for Utdanningsdirektoratet. Tema for tilsyn fastsettes av direktoratet og kan variere fra år til år. Selv om tema varierer, tar alle tilsyn utgangspunkt i å kontrollere etterlevelse av gjeldende regelverk.

Utdanningsdirektoratet har stått for utformingen av de nye læreplanene.[7]

Kommunen
Kommunen er skoleeier for de offentlige grunnskolene og er dermed ansvarlig for at opplæringen holder nødvendig kvalitet, og at den driftes og administreres forsvarlig. Ansvarsfordelingen mellom kommunen og skoleleder varierer alt etter hvilken organisasjonsmodell kommunen har. I såkalte tonivåkommuner er skolekontoret som administrativt bindeledd mellom skolene og kommuneledelsen fjernet, hvilket medfører at skoleledere rapporterer til rådmannens stab. Rektorene ved skoler i slike kommuner opplever ofte at de har fått større ansvar både faglig og økonomisk, og at de har fått ansvar for oppgaver som tidligere tilfalt skolesjefene. I trenivåkommuner er den tradisjonelle organiseringen bevart, og slike kommuner har derfor ofte eget styringsorgan og eget skolekontor. Disse skal fungere som et bindeledd mellom skoleeiere og skoleledere.[8]

Skoleleder (rektor)
På nettstedet www.utdanning.no er begrepet "skoleleder" beskrevet som følgende: En skoleleder er ansvarlig for driften av en skole både *administrativt og faglig*. Skoleledere fungerer også som *personalledere* og har ansvaret for *skolens utvikling*.[9] Det er vanligvis rektor som sitter med det overordnede ansvaret for den enkelte skole. Kompetansemål er sentrale i de nye læreplanene. De angir hva elevene skal kunne mestre etter endt opplæring på ulike trinn. Læreplanverket og kompetansemålene må operasjonaliseres til læringsmål gjennom et lokalt læreplanarbeid. Skolene velger også selv hvilke læremidler (pensum) de ønsker å benytte.

4. Fagsammensetning

Fagsammensetningen i grunnskolen er hjemlet i forskrift til opplæringsloven. Det er flere endringer i fagsammensetningen i grunnskolen etter innføring av Kunnskapsløftet, og de gjelder alle 8.-10.trinn (ungdomstrinnet). Ordning med utdanningsvalg innført med Kunnskapsløftet. Ordningen erstatter yrkespraksis, et fag som ga elevene mulighet til å prøve seg i arbeidslivet. Utdanningsvalgfag skal hjelpe elevene å gjøre et bedre valg av linje på videregående skole.

Videre ble elevrådsarbeid obligatorisk for alle elever på ungdomstrinnet fra Kunnskapsløftet trådte i kraft og ut skoleåret 2011/2012 Faget falt bort med innføring av valgfag på 8.trinn fra skoleåret 2012/2013. Innføring av valgfag er således en nyere endring i fagsammensetningen i Kunnskapsløftet, og skal bidra til å styrke elevenes valgfrihet.

Innføring av valgfag medførte at totalt timetall på 8.-10.trinn økte med 56 timer, samtidig som timetallet ble redusert i RLE, naturfag, fremmedspråk/ språklig fordypning, samfunnsfag, kunst og håndverk, musikk, mat og helse, engelsk,

[7] Udir (2010): Hva er utdanningsdirektoratet? URL: http://www.udir.no/Artikler/_toppmeny/Om-direktoratet/

[8] Engeland og Langfeldt (2009): *Forholdet mellom stat og kommune i styring av norsk utdanningspolitikk 1970 – 2008*. URL: http://adno.no/index.php/adno/article/view/51/123

[9] Utdanning.no (2007): *Skoleleder*. URL: http://utdanning.no/yrker/beskrivelse/skoleleder

kroppsøving og utdanningsvalg.[10] Følgende valgfag ble innført fra og med skoleåret 2012/2013:

- design og redesign
- forskning i praksis
- fysisk aktivitet og helse
- internasjonalt samarbeid
- medier og informasjon
- produksjon av varer og tjenester
- sal og scene
- teknologi i praksis

Den nye fag- og timefordelingen fra skoleåret 2012/2013 presenteres i tabell 3.1 nedenfor, og gjelder for alle som ikke skal ha spesiell fag- og timefordeling. Timene i de fleste fagene er fordelt på hovedtrinnene (barnetrinn og ungdomstrinn). I norsk/samisk, engelsk og matematikk er timene fordelt på årstrinnene 1.-4. klasse, 5.-7. klasse og 8.-10. klasse. Skolene står nokså fritt til å organisere timebruken innenfor rammene som oppgis i tabellen, men friheten begrenses av kompetansemålene i læreplanene som angir det eleven skal kunne etter endt opplæring. Vi vil komme nærmere inn på kompetansemål i senere avsnitt. For skolene betyr ordningen uansett at de for eksempel ikke kan velge å legge all engelskundervisning til 3. og 4. klasse fordi læreplanen opererer med kompetansemål som skal være oppfylt innen eleven fullfører 2. klasse. For å nå disse målene vil det være hensiktsmessig å gå i gang med engelskundervisningen så tidlig som mulig.

Unntak fra fordelingen i tabellen nedenfor gjelder for elever som har samisk opplæring og skal har spesiell fag- og timefordeling. Elever som får slik opplæring har utvidet språkopplæring i norsk og samisk, slik at det samlede timeantallet er 2 176 timer norsk og samisk for elever uten språklig fordypning og 2 062 timer norsk og samisk for elever med språklig fordypning (sistnevnte har 227 timer språklig fordypning i tillegg til sine 2 062 timer med norsk og samisk). Tilsvarende tall for elever som har ordinær fag- og timefordeling er 1 770 norsktimer. Det er også laget egne planer for elever med finsk som andrespråk og for elever som har tegnspråk som førstespråk. Skoler i samiske distrikt skal følge *læreplan for kunnskapsløftet – samisk*. Som vi ser av tabellen ovenfor, er det fagene norsk og matematikk som prioriteres aller høyest i den ordinære læreplanen for grunnskolen, etterfulgt av kroppsøving, samfunnsfag og kunst- og håndverk.

Fremmedspråk som tilbys i grunnskolen
Undervisning i fremmedspråk gis på ungdomstrinnet. Skoleeier er pålagt å tilby opplæring i minst ett av følgende fremmedspråk: tysk, fransk, spansk eller russisk. Skoleeier står fritt til å tilby andre fremmedspråk, også ikke-europeiske. Læreplan for fremmedspråk nivå I, altså fremmedspråk som tilbys på ungdomstrinnet, skal benyttes i begge tilfeller.

[10] Vedlegg 1 til rundskriv Udir 01-2012. Tilgjengelig på http://www.udir.no/Upload/Rundskriv/2012/Udir-1-2012-vedlegg_1.pdf?epslanguage=no (Lesedato: 11.04.2013)

Tabell 3.1 Ordinær fag- og timefordeling i grunnskolen[11]

Fag	1.-7.trinn			8.-10.trinn	Sum grunnskole
	1.-4.	5.-7.	Sum		
RLE			427	153	580
Norsk	931	441	1372	398	1770
Matematikk	560	328	888	313	1201
Naturfag			328	249	577
Engelsk	138	228	366	222	588
Fremmedspråk/ språklig fordypning			0	222	222
Samfunnsfag			385	249	634
Kunst og håndverk			477	146	623
Musikk			285	83	368
Mat og helse			114	83	197
Kroppsøving			478	223	701
Valgfag			0	171	171
Utdanningsvalg			0	110	110
Fleksibel time			38	0	38
Fysisk aktivitet	0	76	76	0	76
Sum			**5234**	**2622**	**7856**

5. Minimumstimetall

Antall timer som skal gis i hvert fag er forskriftsfestet i de ulike læreplanene. Motivasjonen for å fastsette minimumstimetall har å gjøre med elevenes rett til opplæring i et visst omfang. I tillegg er det en måte å styre opplæringen på. Hvis man gir kommunene rett til å fastsette minimumstimetall selv, risikerer man at sammensetningen av fag blir fastsatt ut fra økonomiske hensyn. Styringen skal derfor sikre en viss mengde penger til opplæringen i hvert fag. Selv om skoleeier får pengene, er disse pengene øremerket til de ulike fagene. Det gir en viss sikkerhet for at kravene til minimumstimetall overholdes, men etterlevelse kan også kontrolleres ved tilsyn. Det var for eksempel temaet for tilsynet som ble gjennomført ved videregående skoler i 2008.[12] Skolene kan selvsagt spare ved å samle flere elver i flere klasser, men fra departementshold snakkes det nå om å fjerne denne muligheten ved å innføre retningslinjer for hvor mange elever det er tillatt å ha i hver klasse.[13]

Tabell 3.1 ovenfor gir en oversikt over antall timer skolen er forpliktet til å gi elevene i hvert fag.

6. Curriculum – mål og innhold

Det norske læreplanverket består av en generell del, prinsipper for opplæringen, læreplaner for fag, og fag- og timefordeling. Læreplaner for fag beskriver kompetansemålene for det enkelte fag som tilbys, og for grunnleggende ferdigheter.[14] Formålet med læreplanverket er å sikre helhet og sammenheng i opplæringen.[15]

[11] Rundskriv Udir-01-2012. Tilgjengelig på http://www.udir.no/Upload/Rundskriv/2012/Udir-1-2012.pdf?epslanguage=no (Lesedato: 11.04.2013)
[12] Utdanningsdirektoratet (2008): *Veileder for tilsyn med timetall for elever i videregående skole 2008*. URL: http://www.udir.no/Artikler/_Lov/_Tilsyn/Veileder-for-tilsyn-med-timetall-for-elever-i-videregaende-skole-2008/
[13] Intervju med informant til kartleggingen
[14] Utdanningsdirektoratet (2008): *Oversikt over Læreplanverket for Kunnskapsløftet (LK06).* URL: http://www.udir.no/Artikler/_Lareplaner/Meldingar-og-styringsdokument/
[15] Kunnskapsdepartementet (2010): Svar på skriftlig henvendelse fra Rambøll Management Consulting

Det forutsettes at skolene selv skal arbeide med å omforme kompetansemålene for det enkelte fag til læringsmål. På Kunnskapsdepartementets sider står følgende om lokalt arbeid med læreplaner:

Læreplanene i Kunnskapsløftet forutsetter at det er et lokalt ansvar å arbeide med læreplanene innenfor rammene av kompetansemålene i fag. Selv om det ikke er krav om at det skal utvikles lokale læreplaner, er det særlig i grunnskolen nødvendig å lage en eller annen form for årsplan som angir progresjon og hva slags innhold og aktiviteter som skal knyttes til de ulike kompetansemålene. Dette har sammenheng med at det i grunnskolen bare er kompetansemål på enkelte trinn[16]. Lokalt nivå må også lage egne referanser for hvordan måloppnåelsen skal vurderes. En lokal tilpasning av læreplanene gir muligheter for å ta hensyn til situasjonen ved skolen og gjennom det gi bedre tilpasset opplæring. Lokalt arbeid med lærerplanen kan også bidra til didaktisk arbeid og klarere forståelse av målene for opplæringen.[17]

Utdanningsdirektoratet har utarbeidet en generell veiledning til lokalt arbeid med læreplaner, som revideres i 2013.

6.1 Utforming av læreplaner for fag

Læreplanene for fag har følgende struktur:

- Formål
- Hovedområde
- Timetall
- Grunnleggende ferdigheter
- Kompetansemål
- Vurdering

I avsnittet "formål" utdypes fagets formål og samfunnsmandat. Under "hovedområde" beskrives hovedtemaene faget er delt inn i, og disse skal ses i sammenheng. I avsnittet "timetall" oppgis antall timer som er satt av til faget, og hvordan timetallet fordeles på ulike trinn.

De fem grunnleggende ferdighetene utgjør grunnleggende forutsetninger for læring og utvikling i skole, arbeid og samfunnsliv.[18] De er redskaper for læring i alle fag, og samtidig en forutsetning for at eleven skal kunne vise kompetansen sin. Grunnleggende ferdigheter er følgende:

- Å kunne uttrykke seg muntlig
- Å kunne uttrykke seg skriftlig
- Å kunne lese
- Å kunne regne
- Å kunne bruke digitale verktøy

Grunnleggende ferdigheter har ulik funksjon i ulike fag, og dette beskrives under avsnittet «grunnleggende ferdigheter». I læreplanen for naturfag står det for eksempel hva det innebærer å ha kompetanse i å uttrykke seg muntlig og skriftlig i naturfag:

Å kunne uttrykke seg muntlig og skriftlig i naturfag innebærer å presentere og beskrive egne opplevelser og observasjoner fra naturen. I naturfag er skriftlige rapporter fra eksperimenter, feltarbeid, ekskursjoner og fra teknologiske

[16] Med dette menes at kompetansemål ikke er utarbeidet for alle trinn i skolen, men gruppevis for 1.-2. årstrinn, 3.-4. årstrinn, 5.-7. årstrinn og 8.-10. årstrinn

[17] Kunnskapsdepartementet (2008): St.meld. nr. 31 (2007 – 2008). Kvalitet i skolen. URL: http://www.regjeringen.no/nb/dep/kd/dok/regpubl/stmeld/2007-2008/stmeld-nr-31-2007-2008-/4/3.html?id=516919

[18] Utdanningsdirektoratet (2012). Rammeverk for grunnleggende ferdigheter. Tilgjengelig på http://www.udir.no/Upload/larerplaner/lareplangrupper/RAMMEVERK_grf_2012.pdf?epslanguage=no (Lesedato: 15.04.2013)

utviklingsprosesser sentrale. Å kunne formulere spørsmål og hypoteser og å bruke naturfaglige begreper og uttrykksformer inngår i dette. Å argumentere for egne vurderinger og gi konstruktive tilbakemeldinger er viktig i naturfag.[19]

Under «Kompetansemål» angis hva elevene skal kunne etter endt opplæring på ulike tidspunkt i opplæringen. Kompetansemålene er angitt for 1.-2. årstrinn, 3.-4. årstrinn, 5.-7. årstrinn og 8.-10. årstrinn. Skoleeier, skoleleder og lærerne avgjør hvordan opplæringen skal tilrettelegges, og hvilket pensum og læremateriell som er best egnet for at elevene skal kunne nå kompetansemålene. Den enkelte elevs kompetanse skal vurderes opp imot kompetansemålene både underveis og mot slutten av opplæringen, og det skal skilles mellom ulik grad av måloppnåelse. Elevene skal gjøres kjent med både kompetansemålene, vurderingskriteriene og kjennetegn på ulik grad av måloppnåelse.

6.2 Gjeldende læreplaner i utvalgte fag

I det følgende vil vi gi detaljerte beskrivelser av gjeldende læreplaner i fagene norsk, matematikk, engelsk og naturfag. . *Det er viktig å merke seg at gjeldende læreplaner vil bli erstattet av nye læreplaner fra skoleåret 2013/2014* (se for øvrig avsnitt 6.3).

6.2.1 *Læreplan i norsk*

Et av hovedformålene for norskopplæringen er at eleven skal utvikle "språklig selvtillit og trygghet i egen kultur som grunnlag for utvikling av identitet, respekt for andre kulturer, aktiv samfunnsdeltakelse og livslang læring".[20] Det skal legges til rette for at elevene lærer å lese og skrive på begge målformene, bokmål og nynorsk. Norskfaget er sentralt for elevenes utvikling av kulturforståelse, kommunikasjonsferdigheter, dannelse og identitetsutvikling. Dette er avgjørende ferdigheter for å kunne delta i samfunns- og arbeidsliv. Lese- og skriveferdigheter er både et mål i seg selv og en forutsetning for å kunne lykkes med andre fag.

Hovedområdene for norskfaget er muntlige tekster, skriftlige tekster, sammensatte tekster (for eksempel tegneserier, film eller reklame) og språk og kultur. Hovedområdene skal ses i sammenheng.

I læreplanen for norsk er kompetansemålene knyttet til de fire hovedområdene. Listen over mål er svært omfattende, og vi må derfor nøye oss med å velge ut noen eksempler. Blant kompetansemålene i muntlige tekster etter 2. årstrinn finner vi for eksempel "uttrykke egne følelser og meninger" og "fortelle sammenhengende om opplevelser og erfaringer". Et av de muntlige kompetansemålene for 7. årstrinn er " lytte til andre, uttrykke og grunngi egne standpunkter og vise respekt for andres".[21]

De grunnleggende ferdighetene *å kunne uttrykke seg muntlig, å kunne uttrykke seg skriftlig* og å *kunne lese* sammenfaller i stor grad med generelle målsettinger for norskfaget. *Å kunne regne* i norskfaget forutsetter et annet språk enn verbalspråket. Det handler om begrepsutvikling, logisk resonnement og problemløsning, og gjelder forståelse for form, system og komposisjon. Konkret krever det at man utvikler kompetanse på å lese sammensatte tekster med grafiske fremstillinger, tabeller eller statistikk. *Å kunne bruke digitale verktøy* i norskfaget innebærer blant annet at elever utvikler evne til kritisk å vurdere innholdet i kilder og bruk av disse.

Kapittelet "vurdering" i norsk angir bestemmelsene for når eksamen skal avlegges. Ved avslutning av 10. klasse skal elevene ha tre standpunktkarakterer, én i norsk hovedmål skriftlig, én i norsk sidemål skriftlig og én i norsk muntlig. Elevene kan bli

[19] Utdanningsdirektoratet: *Læreplan i naturfag.* URL: http://www.udir.no/grep/Lareplan/?laereplanid=117461&visning=4
[20] Utdanningsdirektoratet: *Læreplan i norsk.* URL: http://www.udir.no/grep/Lareplan/?laereplanid=1001576
[21] Ibid.

trukket ut til to dagers skriftlig eksamen som omfatter norsk hovedmål (bokmål) og norsk sidemål (nynorsk). Skriftlig eksamen er sentralt gitt, og blir laget og sensurert sentralt. Elevene kan også bli trukket ut til muntlig eksamen i norsk. Muntlig eksamen er lokalt gitt. Den blir utabeidet og sensurert lokalt.[22]

Læreplan i matematikk
Under "formål" slår læreplanen fast at solid matematikkompetanse er en forutsetning for samfunnsutvikling. For fortsatt utvikling er man avhengig av borgere som kan forstå og vurdere kvantitativ informasjon, gjennomføre statistiske analyser og lage økonomiske prognoser. Matematikkfaget er nødvendig for å kunne forstå og påvirke prosesser i samfunnet. Det presiseres at faget må legge til rette for at både gutter og jenter får rike erfaringer med faget.

Hovedområdene i matematikkfaget er tall og algebra, geometri, måling, statistikk, sannsynlighetsregning og kombinatorikk, funksjoner og økonomi.

Kompetansemålene er delt inn på samme måte som for norskfaget. Også her er de omfattende, og vi må nøye oss med å gi eksempler. For elever som avslutter 2. klasse er det blant annet et mål at de skal kunne telle til 100, dele opp og bygge mengder opp til 10, sette sammen og dele opp tiergrupper". For elever som avslutter 10. klasse er et tilsvarende mål på kompetanse i algebra at de kan "sammenligne og regne om heltall, desimaltall, brøker, prosent, promille og tall på standardform, og uttrykke slike tall på varierte måter".[23]

Den grunnleggende ferdigheten *å kunne regne* sammenfaller med hovedmålsettingen for matematikkfaget. *Å kunne uttrykke seg muntlig* i matematikk innebærer blant annet at eleven er i stand til å uttrykke en mening eller argumentere for en sak ved bruk av tall. *Å kunne uttrykke seg skriftlig* og å *kunne lese* i matematikkfaget innebærer for eksempel at eleven kan beskrive eller forklare en tankegang, og tolke og dra nytte av en matematisk tekst. *Å kunne bruke digitale verktøy* innebærer blant annet å bruke slike verktøy til å løse praktiske problemer.

Vurdering skal finne sted ved hjelp av standpunktkarakter for elever som avslutter 10. klasse. Elevene kan i tillegg trekkes ut til én skriftlig og én muntlig eksamen.

Læreplan i engelsk
Formålet med engelskfaget er å utvikle elevenes kommunikative ferdigheter og kulturelle innsikt. Siden engelsk er et verdensspråk, vil kunnskaper i faget gi eleven et godt grunnlag for å lære mer om andres levemåte og derigjennom forstå verden bedre. Opplæring i fremmedspråk kan dessuten bidra til å gi eleven bedre innsikt i eget morsmål.

Hovedområdene i engelskfaget er språklæring, kommunikasjon, og kultur, samfunn og litteratur. Kompetansemålene er fordelt på disse områdene. Læreplanen for engelsk angir også en rekke kompetansemål. Under området "kommunikasjon" er det for eksempel bestemt at elevene etter 2. årstrinn skal kunne "hilse, stille spørsmål og svare på enkle muntlige spørsmål". Etter 10. årstrinn skal de blant annet kunne "bruke språkets grunnleggende formverk og tekststrukturer muntlig og skriftlig".[24]

---

[22] Utdanningsdirektoratet: *Læreplan i norsk.* URL: http://www.udir.no/grep/Lareplan/?laereplanid=1001576&visning=1
[23] Utdanningsdirektoratet: Læreplan i matematikk. URL: http://www.udir.no/grep/Lareplan/?laereplanid=994153&visning=5
[24] Utdanningsdirektoratet: *Læreplan i engelsk.* URL: http://www.udir.no/grep/Lareplan/?laereplanid=122422

Som i norskfaget sammenfaller de grunnleggende ferdighetene *å kunne uttrykke seg muntlig, å kunne uttrykke seg skriftlig* og å *kunne lese* i engelsk i stor grad med generelle målsettinger for faget. *Å kunne regne* i engelsk innebærer blant annet at eleven kan supplere regnekompetansen på morsmålet sitt med tilsvarende engelske uttrykk. For *å kunne bruke digitale verktøy* er engelskkompetanse i mange tilfeller en forutsetning, samtidig som bruken av digitale verktøy kan bidra til å styrke elevens kompetanse i engelskfaget.

Vurdering gjøres ved hjelp av standpunktkarakter for elever som avslutter 10. klasse. I engelsk skal de ha én karakter for muntlig engelsk og én for skriftlig. Elevene kan i tillegg trekkes ut til én skriftlig og én muntlig eksamen.[25]

Læreplan i naturfag
Under "formål" slår planen fast at "kunnskap om, forståelse av og opplevelser i naturen kan fremme viljen til å verne om naturressursene, bevare biologisk mangfold og bidra til bærekraftig utvikling", og at naturfag samtidig skal bidra til at "barn og unge utvikler kunnskaper og holdninger som gir dem et gjennomtenkt syn på samspillet mellom natur, individ, teknologi, samfunn og forskning". Det gir grunnlag for å forstå ulike typer teknisk og naturvitenskapelig informasjon.

Hovedområdene for naturfag er forskerspiren, mangfold i naturen (bærekraftig utvikling), kropp og helse (ernæring og helse), verdensrommet (stråling og radioaktivitet), fenomener og stoffer (energi for fremtiden), og teknologi og design (bioteknologi). Kompetansemålene i naturfag er organisert under disse områdene. *Forskerspirene* som avslutter 2. klasse skal blant annet kunne "stille spørsmål, samtale og filosofere rundt naturopplevelser og menneskets plass i naturen". Innen *forskningsspirene* fullfører 10. klasse skal de blant annet kunne "planlegge og gjennomføre undersøkelser for å teste holdbarheten til egne hypoteser og velge publiseringsmåte".[26]

Den grunnleggende ferdigheten *å kunne regne* innebærer i naturfag at elevene kan bruke tall og beregninger til å gjennomføre og bruke egne målinger, lage tabeller og diagrammer med naturfaglig innhold, tolke formler og bruke modeller, og bearbeide data. *Å kunne bruke digitale verktøy* er særlig relevant i naturfag, hvor slike verktøy blant annet kan benyttes til utforskning, måling og visualisering av forsøk og feltarbeid. Digitale animasjoner, simuleringer og spill er egnet til å stimulere kreativitet og visualisere naturfaglige problemstillinger. *Å kunne uttrykke seg muntlig og skriftlig* innebærer blant annet å kunne beskrive og presentere egne opplevelser i naturen, og formulere spørsmål og hypoteser. *Å kunne lese* i naturfag innebærer blant annet at eleven kan lese og sette seg inn i innholdet i ulike tekster med naturfaglig innhold.

Elevenes kompetanse skal vurderes ved hjelp av én standpunktkarakter. De kan i tillegg trekkes ut til én muntlig eksamen.[27]

6.3 Pensum i skolen

De nasjonale læreplanene danner en forpliktende ramme for opplæringen, og kompetansemålene i ulike fag angir hva eleven skal kunne etter endt opplæring i faget. Skolene har full metodefrihet med innføringen av Kunnskapsløftet i 2006, og det innebar blant annet at de fikk ansvar for å fastsette pensum selv. Med pensum forstås her de ulike læremidlene lærerne benytter i undervisningen.

[25] Ibid.
[26] Utdanningsdirektoratet: *Læreplan i naturfag*. URL: http://www.udir.no/grep/Lareplan/?laereplanid=117461&visning=5
[27] Ibid.

Læremiddel er i forskrift til opplæringsloven § 17-1 definert som "alle trykte eller ikke-trykte elementer, enkeltstående eller slike som går inn i en helhet, og som alene eller til sammen dekker vesentlige deler av de generelle målene i læreplanen, eller vesentlige deler av målene, lærestoffet, hovedmomentene eller hovedemnene i et fag etter læreplanen for et visst klassetrinn eller kurs".[28]

I dag kreves det ikke at læremidler skal godkjennes før de tas i bruk i skolen. En slik ordning fantes før, men den ble avskaffet ved en lovendring i opplæringsloven § 9-4 den 1. august 2000. Tidligere kirke-, utdannings- og forskningsminister, Kristin Clemet, sier følgende om årsaken til at ordningen ble fjernet:

Begrunnelsen for å fjerne godkjenningsordningen var bl.a. at foreldre og elever selv mer skulle kunne påvirke hvilke typer læremidler som skulle brukes i skolen og at lærebokforfatterens stemme skulle kunne være mer tydelig. Man ønsket ikke alle bøker støpt i en form, og en av begrunnelsene var at lærebøkene kunne bli like eller ensrettet gjennom en godkjenningsordning. Etter avviklingen av godkjenningsordningen er valg og kvalitetsvurdering av lærebøker overlatt til skoleeier og skolene selv, i samråd med elever, foreldre og skolens pedagogiske personale.[29]

Formålet med godkjenningsordningen var dessuten kun å kontrollere og påpeke eventuelt diskriminerende innhold i læremidlene. Den pedagogiske kvaliteten i læremidlene ble ikke vurdert. I forhold til læremidlene som pedagogiske ressurser har fjerningen av godkjenningsordningen derfor vært av mindre betydning.[30]

6.4 Justering og revisjon av læreplaner i fag

I 2010 ble læreplaner i norsk, engelsk, matematikk, samfunnsfag og naturfag justert som følge av diskusjoner om tilpasning av kompetansemålene til yrkesrettede fag i videregående opplæring. Justeringene gjaldt således kompetansemålene for videregående opplæring, og faller utenfor dette notatets fokusområde. Utdanningsdirektoratet anbefalte imidlertid en grundigere gjennomgang av de gjennomgående fagene[31] i etterkant av justeringene som ble gjort i 2010. Anbefalingen hang også sammen med at evaluering av Kunnskapsløftet viste at skolene ikke jobbet tilstrekkelig med grunnleggende ferdigheter. [32] I slutten av 2010 ga Kunnskapsdepartementet således Utdanningsdirektoratet i oppdrag å utarbeide et rammeverk for grunnleggende ferdigheter, og revidere læreplaner i norsk, samfunnsfag, naturfag, matematikk og engelsk.[33]

Rammeverket for grunnleggende ferdigheter ble fastsatt i januar 2012.[34] Her defineres de fem grunnleggende ferdighetene, funksjonen for hver av dem skisserer, og det gis en beskrivelse av progresjonen for hver av dem på fem nivåer uavhengig av fag.

Utkast til forslag til de ulike læreplanene ble utarbeidet av ulike faggrupper sammensatt av erfarne lærere fra grunn – og videregående opplæring og

[28] Lovdata (2010): *Forskrift til opplæringslova*. ULR: http://www.lovdata.no/for/sf/kd/xd-20060623-0724.html. Loveteksten er oversatt fra nynorsk til norsk bokmål av Rambøll Management Consulting.
[29] Stortinget (2001): *Skriftlig spørsmål fra Ulf Erik Knudsen (FrP) til kirke-, utdannings- og forskningsministeren*. URL: http://www.stortinget.no/no/Saker-og-publikasjoner/Sporsmal/Skriftlige-sporsmal-og-svar/Skriftlig-sporsmal/?qid=23253
[30] Intervju med informant til kartleggingen
[31] Fag som det gis opplæring i gjennom hele skoleløpet.
[32] Aasen, P. et.al. (2009). Kunnskapsløftet – tung bør å bære. NIFU STEP Rapport 42/2009.
[33] Oppdragsbrev fra Kunnskapsdepartementet til Utdanningsdirektoratet datert 06.12.2010. Tilgjengelig på http://www.norskundervisning.no/blogg/wp-content/uploads/2011/09/Oppdragsbrev-Revisjon2013.pdf (Lesedato: 10.04.2013)
[34] Rammeverket er tilgjengelig på http://www.udir.no/Lareplaner/Forsok-og-pagaende-arbeid/Lareplangrupper/Rammeverk-for-grunnleggende-ferdigheter/ (Lesedato: 10.04.2013)

fagdidaktikere fra universiteter og høgskoler.[35] Faggruppene la frem sine forslag for Utdanningsdirektoratet høsten 2012. Forslagene til nye læreplaner for fag ble sendt på høring 5.desember 2012, med høringsfrist 5.mars 2013. De nye læreplanene planlegges å tas i bruk fra skoleåret 2013/2014.

Felles for forslagene som ble sendt på høring var

- Justeringer av tekstene om de grunnleggende ferdighetene i faget som tydeliggjør ferdighetene, og som synliggjør hvordan ferdighetene utvikles gjennom hele opplæringsløpet. Betegnelsene for to av ferdighetene, «å kunne uttrykke seg muntlig» og «å kunne bruke digitale verktøy», foreslås endret til «muntlige ferdigheter» og «digitale ferdigheter».
- Justeringer i kompetansemålene som tydeliggjør de fem grunnleggende ferdighetene og progresjonen i dem gjennom hele løpet.

I tillegg foreslås det endringer i teksten for formål og hovedområder i faget for de fleste fag.

I det følgende beskrives revisjon av læreplan i norsk og matematikk nærmere.

6.4.1 Revisjon av læreplan i norsk

Kunnskapsdepartementet har bedt om en særskilt gjennomgang av norskfaget, herunder gjennomgå ordningene for sluttvurdering. Høringsforslaget innebærer justering av omfang og bredde i læreplanen for å gjøre ambisjonsnivået mer realistisk. Antall kompetansemål er redusert; noen mål er fjernet mens andre er forenklet. Videre innebærer læreplanforslaget å redusere antall hovedområder fra fire til tre. Hovedområdene foreslås endret fra «muntlige tekster» til «muntlig kommunikasjon», fra «skriftlige tekster» til «skriftlig kommunikasjon», fra «språk og kultur» til «språk, kultur og litteratur». Hovedområdet «sammensatte tekster» vil med forslaget til ny læreplan falle bort. Videre er grunnleggende ferdigheter i norskfaget tydeliggjort, med særlig vekt på progresjon i de grunnleggende ferdighetene «å kunne lese», «å kunne skrive» og «muntlige ferdigheter».

Opplæring i norsk består blant annet av opplæring i begge de norske målformene, og elevene bestemmer selv hvilket fag de ønsker som hovedmål og sidemål. Utdanningsdirektoratet har i sitt forslag tydeliggjort og presisert kompetansemål som omhandler de to målformene. I gjeldende læreplan gis elevene standpunktkarakterer i muntlige ferdigheter og i skriftlige ferdigheter på begge målføre, som sluttvurdering i faget på 10.trinn. Det vil si at elevene får tre standpunktkarakterer i norsk til sammen. I tillegg kan elevene trekkes ut til muntlig og/eller skriftlig eksamen i norsk, og kan således ende opp med hele seks karakterer i norsk på vitnemålet ved avslutning av grunnskolen. Det betyr at elevenes prestasjoner i norsk får stor betydning for gjennomsnittet av karakterene fra grunnskolen. I forslag til ny læreplan ber Utdanningsdirektoratet høringsinstansene om å ta stilling til tre ulike modeller for sluttvurdering i faget. De tre modellene er

- Videreføre gjeldende sluttvurderingsordning
- To standpunktkarakterer; en i skriftlige ferdigheter og en i muntlige ferdigheter. En eksamenskarakter for elever som trekkes ut til skriftlig eksamen. Eksamenskarakteren baseres på en oppgave i hovedmålet og en i sidemålet.
- En standpunktkarakter og en eksamenskarakter for elever som trekkes ut til skriftlig eksamen. Eksamenskarakter baseres på en oppgave i hovedmål.

[35] Høringsbrev fra Utdanningsdirektoratet, datert 05.12.2012. Tilgjengelig på http://www.udir.no/Upload/hoeringer/2012/051212/051212_Hoeringsbrev_felles.pdf?epslanguage=no (Lesedato: 10.04.2013(

Etter oppsamling av innkomne høringsuttalelser vil Utdanningsdirektoratet oversende endelig forslag til nye læreplaner til Kunnskapsdepartementet 15.april, og læreplanene forventes å tas i bruk skoleåret 2013/2014.

6.4.2 Revisjon av læreplan i matematikk

Oppdraget fra Kunnskapsdepartementet når det gjaldt revisjon av læreplan i matematikk gjaldt endringer som legger til rette for tydeligere progresjon i samsvar med matematikkfagets egenart ved å tydeliggjøre de fem grunnleggende ferdighetene. Forslaget innebærer derfor forslag til endring i teksten om de grunnleggende ferdighetene i faget, samt endringer i kompetansemålene for å tydeliggjøre progresjon i hva elevene forventes å kunne gjennom opplæringsløpet. Det er også gjort utdypninger og presiseringer i kompetansemål som gjelder algebra og økonomi på 10.trinn (og på videregående nivå) for å styrke disse disiplinene.

7. Vurderingspraksis

I dette avsnittet vil vi se på vurderingspraksis på nasjonalt nivå og lokalt nivå. Nasjonalt nivå omfatter både bruken av nasjonale prøver og deltakelse i internasjonale undersøkelser som for eksempel PISA. Lokalt nivå omfatter lærernes vurderingspraksis vis-à-vis enkeltelever.

Nasjonal vurdering

På nasjonalt nivå anvendes seks verktøy: nasjonale prøver, avgangsprøver, og de internasjonale PISA-kartleggingene (Programme for International Student Assessment), PIRLS (Progress in International Reading Literacy Study), TIMSS (Trends in International Mathematics and Science Study) og ICCS (International Civic and Citizenship Education Study).

Nasjonale prøver gjennomføres om høsten for elever på 5. og 8. trinn. Elevene testes i lesing, regning og engelsk. Formålet med prøvene er å undersøke hvordan elevene ligger an i forhold til kompetansemålene i læreplanene i de ulike fagene. Prøvene tester grunnleggende ferdigheter i alle fag. Prøvene tar derfor for seg alle fag hvor lesing, regning og engelsk er integrert i kompetansemålene. Unntaket er prøven i engelsk, som tar utgangspunkt i kompetansemålene i ett fag. Lærere får tilgang til resultatene til elevene de har ansvar for. Videre skal de gi læreren kunnskap om hvilke elever i klassen som har behov for ekstra støtte og oppfølging. Resultatene fra prøvene oppgis i form av gjennomsnitt, standardavvik og som prosentfordeling på en skala med tre og fem nivåer for henholdsvis femteklassinger og åttendeklassinger. Det er utarbeidet en veileder for lærerne i hvordan de kan bruke resultatene fra testene. [36] Testene gir er imidlertid ikke konstruert slik at de gir grunnlag for å vurdere endringer i elevenes ferdigheter over tid på individnivå.[37]

Nasjonale prøver skal "gi økt kunnskap og være grunnlag for forbedrings- og utviklingsarbeid lokalt og sentralt".[38] I tillegg forventes det at prøvene skal komme til nytte for den enkelte elevs pedagogiske utvikling ved at informasjonen prøvene gir blir brukt i samarbeidet mellom lærer, elev og foresatte.[39] Kunnskapsdepartementet bruker resultatene til to hovedformål. For det første gir prøvene og analyse av prøvene viktig informasjon om fordeling av elevgrupper på ulike resultater. De gir blant annet kjennskap til fordeling på kjønn, elevenes bakgrunn og

[36] Utdanningsdirektoratet (2009): Hva er nasjonale prøver? URL: http://www.udir.no/Artikler/_Nasjonale-prover/Hva-er-nasjonale-prover2/
[37] Kunnskapsdepartementet (2010): Svar på skriftlig henvendelse fra Rambøll Management Consulting
[38] Utdanningsdirektoratet (2008): *Nasjonale prøver 2007: Brukernes evaluering av gjennomføringen*. URL: http://www.udir.no/Rapporter/Nasjonale-prover-2007-Brukernes-evaluering-av-gjennomforingen/
[39] Ibid.

geografi. Dette gir grunnlag for tiltak som kan rettes spesielt mot ulike elevgrupper. For det andre bruker Kunnskapsdepartementet resultatene sammen med annen informasjon, for å følge opp kommuner som har spesielle utfordringer.[40]

Avgangsprøver gis til elever i 10. klasse og gjennomføres om våren. Elevene trekkes ut til å delta i en sentralt gitt skriftlig eksamen og en lokalt gitt muntlig eksamen. Den skriftlige, nasjonalt gitte eksamenen er lik for alle, det vil si at samme oppgavesett gis til alle kandidatene. Lokalt gitt muntlig eksamen gjennomføres med lokal eksaminator, som i de fleste tilfeller vil være faglærer, og en ekstern sensor. Kommunene står for trekkingen elever til eksamen, og har ansvar for at kandidatene fordeler seg jevnt på fag og skoler.[41] Læreplanene for de ulike fagene fastsetter om det skal avholdes eksamen i faget, og hvilken form (skriftlig/muntlig) eksamen i så fall skal ha.[42] Skriftlig eksamen gis i følgende fag:

- Norsk hovedmål/Norsk sidemål
- Norsk med fritak for vurdering av sidemål
- Samisk som førstespråk - nordsamisk
- Samisk som førstespråk - sørsamisk
- Samisk som førstespråk - lulesamisk
- Samisk som andrespråk – samisk 2 - nordsamisk
- Samisk som andrespråk – samisk 2 - sørsamisk
- Samisk som andrespråk - samisk 2 - lulesamisk
- Norsk for elever med samisk som førstespråk
- Norsk tegnspråk
- Norsk for døve og sterkt tunghørte
- Finsk som andrespråk
- Engelsk
- Engelsk for døve og sterkt tunghørte
- Matematikk

Elevene får fem timer til rådighet til å besvare eksamen.[43] Retningslinjene for lokalt gitt muntlig eksamen for grunnskolen er fastsatt i Forskrift til opplæringsloven §3-29. Den gir kommunene stor frihet til selv å organisere muntlig eksamen. Vanlige fag for muntlig eksamen, som også er gjengitt i nasjonal karakterstatistikk, er norsk, engelsk, matematikk, naturfag og samfunnsfag.[44] Karakterskalaen på muntlig og skriftlig eksamen går fra 1 til 6, der 6 er høyeste karakter og 0 er laveste. Karakterene er nærmere beskrevet i Forskrift til opplæringsloven:

- Karakteren 6 utrykker at eleven har fremragende kompetanse i faget
- Karakteren 5 utrykker at eleven har meget god kompetanse i faget
- Karakteren 4 uttrykker at eleven har god kompetanse i faget
- Karakteren 3 uttrykker at eleven har nokså god kompetanse i faget
- Karakteren 2 uttrykker at eleven har lav kompetanse i faget
- Karakteren 1 uttrykker at eleven har svært lag kompetanse i faget[45]

[40] Kunnskapsdepartementet (2010): Svar på skriftlig henvendelse fra Rambøll Management Consulting
[41] Utdanningsdirektoratet (2009): *Trekkordning ved eksamen i Kunnskapsløftet.* URL: http://www.udir.no/upload/Rundskriv/2009/udir-1-2009.pdf
[42] Lovdata (2009): *Forskrift til opplæringslova.* URL: http://www.lovdata.no/for/sf/kd/td-20060623-0724-008.html#3-29
[43] Utdanningsdirektoratet (2010): *Trekking, påmelding og gjennomføring av eksamen for grunnskolen i Kunnskapsløftet.* URL: http://www.udir.no/Brev/_eksamen/Trekking-pamelding-og-gjennomforing-av-eksamen-for-grunnskolen-i-Kunnskapsloftet/
[44] SSB (2009): Statistikkbanktabell 07498. URL: www.ssb.no
[45] Lovdata (2009): *Forskrift til opplæringslova.* URL: http://www.lovdata.no/for/sf/kd/td-20060623-0724-008.html#3-29. Lovteksten er oversatt fra nynorsk til bokmål av Rambøll.

Alle avgangselever skal ha én muntlig og én skriftlig eksamen, med mindre de har fritak for denne type vurdering.[46]

Norge deltar de internasjonale kartleggingene PISA, PIRLS, TIMSS, ICCS.[47] PISA er en internasjonal komparativ undersøkelse av skolesystemene i ulike land. PISA-undersøkelsen måler 15-åringers kompetanse i lesing, matematikk og naturfag. Undersøkelsen gjennomføres hvert tredje år. I Norge har Institutt for lærerutdanning og skoleutvikling (ILS) ved Universitetet i Oslo ansvaret for gjennomføringen av undersøkelsen.[48] PIRLS er en undersøkelse av leseferdigheter. Da undersøkelsen sist ble gjennomført, i 2006, deltok et utvalg fjerde- og femteklassinger fra 45 land og stater. Undersøkelsen gjennomføres hvert femte år.[49] TIMSS tester femte- og åttendeklassingers kunnskaper i matematikk og naturfag. Formålet med studien er å kartlegge hva som fremmer elevers læring i disse fagene.[50] Formålet med ICCS er "å gi et bilde av unge menneskers demokratiske beredskap og vilje til å delta i samfunnet som engasjerte medborgere".[51] Målgruppen for undersøkelsen er elever på åttende trinn. Hovedundersøkelsen ble gjennomført i 2009.[52]

Lokal vurdering
Forskrift til opplæringslovens kapittel 3 angir retningslinjer for vurdering og karaktersetting. Kompetansemålene i læreplanene for de ulike fagene utgjør grunnlaget for vurdering. Karakterer benyttes kun på ungdomstrinnet. Her brukes også karakterskala som går fra 1 til 6, der 6 er høyeste karakter og 1 er laveste. Karakteren 2 er laveste bestått karakter. I fag hvor tallkarakter ikke benyttes, brukes i stedet "deltatt/ikke deltatt" eller "bestått/ikke bestått". Som nevnt skal orden og oppførsel ikke ha noen innvirkning på vurdering eller karaktersetting i fag. Orden og oppførsel skal vurderes separat. På ungdomstrinnet benyttes tre karakterer til dette: god, nokså god og lite god.

En rekke forhold skal holdes utenfor når en lærer vurderer elevers kompetanse i et fag, herunder forutsetningene til den enkelte elev, fravær og forhold knyttet til orden og atferd. Det eneste unntaket i forhold til forutsetninger er faget kroppsøving, hvor læreren skal ta hensyn både til elevens forutsetninger og til hans eller hennes kompetanse. En lærer skal så langt det er mulig skaffe seg et grunnlag for å vurdere elevens kompetanse, også dersom elevens fravær er høyt eller andre grunner gjør det vanskelig å vurdere kompetansen hans. Eleven har imidlertid et ansvar for å møte opp og delta aktivt i opplæringen slik at læreren får tilstrekkelig grunnlag for å vurdere kompetansen, og høyt fravær eller andre forhold som hindrer lærerens vurderingsarbeid, kan medføre at grunnlaget faller bort for å gi halvårsvurdering med karakter eller standpunktkarakter.

I norsk vurderingspraksis gjøres det et skille mellom vurdering *for* læring og vurdering *av* læring. Begrepene underveisvurdering og sluttvurdering benyttes også. Vi vil gå nærmere inn på alle disse.

---

[46] Kunnskapsdepartementet (2010): Svar på skriftlig henvendelse fra Rambøll Management Consulting
[47] Ibid.
[48] Utdanningsdirektoratet (2009): *PISA 2006: Svakere resultater i alle fag.* URL: http://www.utdanningsdirektoratet.no/Artikler/_Forskning/_Internasjonale-studier/PISA-2006-Svakere-resultater-i-alle-fag/
[49] Utdanningsdirektoratet: *Hva er PILRS?* URL: http://www.udir.no/upload/Forskning/Internasjonale_undersokelser/Hva_er_PIRLS.pdf
[50] Utdanningsdirektoratet (2008): *TIMSS, Trends in International Mathematics and Science Study.* URL: http://www.udir.no/Artikler/_Forskning/_Internasjonale-studier/Trends-in-International-Mathematics-and-Science-Study-TIMSS-2007/
[51] Utdanningsdirektoratet (2007): *ICCS 2009, International Civic and Citizenship Education Study.* URL: http://www.udir.no/Artikler/_Forskning/_Internasjonale-studier/International-Civic-and-Citizenship-Education-Study-ICCS-2009/
[52] Ibid.

Vurdering for læring har læring som formål. Slik vurdering gjøres underveis i løpet av skoleåret og har til hensikt å gi eleven et grunnlag for å forbedre seg. Eleven får vite hva han eller hun behøver å jobbe mer med, og læreren får et bedre grunnlag for å gi tilpasset undervisning. Vurdering av læring dreier seg mer om å dokumentere nivået på kunnskapen eleven har ervervet seg i et fag. Slike vurderinger gjøres jevnlig underveis i utdanningsløpet.

Forskrift til opplæringslova opererer med begrepene underveisvurdering og sluttvurdering. Underveisvurdering skal gi eleven informasjon om hvordan han eller hun ligger an i et fag. Den kan være en vurdering for læring eller en vurdering av læring, men formålet er uansett å gi tilbakemeldinger til eleven. Resultatet av denne vurderingen skal ikke telle med i grunnlaget for sluttvurderingen. Informasjonen skal gis på en slik måte at eleven kan nyttiggjøre seg den med tanke på å fremme egen læring. Sluttvurderingen skal gi informasjon om hvordan eleven ligger an når opplæringen i faget avsluttes. Den er en vurdering av læring.

Forskriften stiller ikke krav til vurderingens form, så derfor kan vurderingen gjøres ved bruk av skriftlige eller muntlige prøver eller andre måter å evaluere elevenes kompetanse på.[53] Skolene og lærerne står fritt til å velge vurderingsopplegget de finner mest hensiktsmessig. Det finnes ingen minstekrav til antall prøver som må gjennomføres i de ulike fagene.[54]

Ifølge forskrift til opplæringsloven har elevene rett til halvårsvurdering, med karaktergivning fra og med 8. klasse. Halvårsvurderingen gjennomføres midt i skoleåret og skal gi eleven informasjon om hvor han eller hun står i de ulike fagene. Endelig skal standpunktkarakteren være basert på "et bredt vurderingsgrunnlag som samlet viser den kompetansen eleven har i faget".[55] Stanspunktkarakteren skal sammen med eksamenskarakteren(e) føres på vitnemålet eleven får ved avsluttet grunnskole. Standpunktkarakterer i fag og i orden og i atferd (oppførsel), samt eksamenskarakterer, skal føres på vitnemålet. Karakteren bliver gitt ved avslutningen av opplæringen i et fag, og gir uttrykk for kompetansen eleven har oppnådd i faget.[56]

Debatten om nasjonale vurderingskriterier

Hvorvidt nasjonale vurderingskriterier skal tas i bruk eller ikke, er en pågående debatt i Norge. Vurderingskriterier er nærmere redegjørelser for hvordan lærere skal bedømme elevers prestasjoner og hva de skal fokusere på. Utdanningsdirektoratet har argumentert for å innføre nasjonale vurderingskriterier fra 2. trinn. De har tatt utgangspunkt i en rapport fra OECD og annen tilgjengelig forskning, og på bakgrunn av dette materialet har de lansert fravær av systematisk vurdering som en mulig forklaring på norske 15-åringers relativt svake skoleprestasjoner.[57] Utdanningsforbundet, en fagorganisasjon for pedagogisk personale i utdanningssektoren, har vært svært skeptisk til forslaget om å innføre nasjonale vurderingskriterier. De ser kriteriene som en snikinnføring av karakterer på barnetrinnet, og hevder at nasjonale vurderingskriterier vil begrense lærernes handlingsrom.[58] I forbindelse med revisjon av læreplaner i fag har

[53] Skolenettet.no: *Hva er vurdering for læring?* URL: http://www.skolenettet.no/Moduler/Vurdering/Templates/Pages/SectionPage.aspx?id=64645&epslanguage=NO
[54] Kunnskapsdepartementet (2010): Svar på skriftlig henvendelse fra Rambøll Management Consulting
[55] Skolenettet.no: *Hva er vurdering for læring?* URL: http://www.skolenettet.no/Moduler/Vurdering/Templates/Pages/SectionPage.aspx?id=64645&epslanguage=NO
[56] Utdanningsdirektoratet (2010): *Retningslinjer – vitnemål for grunnskolen.* URL: http://www.udir.no/Brev/_lover-og-regler/Foring-av-vitnemal-for-grunnskolen-i-Kunnskapsloftet/
[57] Utdanningsdirektoratet (2006): *Elevvurdering i Kunnskapsløftet*. URL: http://www.udir.no/upload/Brev/Elevvurdering_i_Kunnskapsloeftet.pdf
[58] Utdanningsnytt (2006): *Skepsis til nasjonale vurderingskriterier fra 2. Trinn*. URL: http://www.utdanningsnytt.no/templates/udf20____12521.aspx

Utdanningsdirektoratet utarbeidet forslag til veiledende kjennetegn på måloppnåelse på 10.trinn.[59]

8. Erfaringer med forsøk

Utdanningsmyndighetene har vært restriktive med å gi adgang til gjennomføring av forsøk under Kunnskapsløftet. Målsettingen er å få skolene til å drive innenfor nasjonal struktur og tilpasse innenfor de mulighetene som finnes der. Det er mulighet for fleksibilitet også innenfor dette systemet. Årsaken til den restriktive linjen er blant annet at Kunnskapsløftet en ny reform. Det er derfor ønsket fra Utdanningsdirektoratets side at den får tid til å virke før forsøk vurderes. Videre ønsker myndigheten å sikre elevene et opplæringstilbud som gir grunnlag for opptak på videregående skole. På ungdomstrinnet får elevene vitnemål uansett, men de skal likevel ha de fag og timene de har rett til. Det vises nemlig på vitnemålet hvilke fag man har hatt, og det kan legge føringer på opptak til videregående. Hvis man skal fravike læreplanen, må skolen derfor levere søknad og få planen godkjent av Utdanningsdirektoratet. Hvis man klarer å drive alternativ opplæring innenfor det vanlige systemet kan skoleeier organisere opplæringen slik den finner hensiktsmessig.

Unntak fra den restriktive linjen finnes imidlertid. Noen er innbakt i lovverket som unntaksbestemmelser, andre er initierte forsøksordninger.

Forskrift til opplæringsloven § 1-14 gir elever på ungdomstrinnet adgang til å ta fag med gjennomgående læreplaner på videregående skole. Ordningen forutsetter at eleven har tilstrekkelig kompetanse til å delta og nyttiggjøre seg undervisning på høyere nivå. Den forutsetter også at den aktuelle ungdomsskolen og videregående skolen ivaretar alle aspekter ved samarbeidet. Staten stiller ikke ekstra midler til disposisjon.[60] Fra skoleåret 2012/ 2013 er også programfag (fag knyttet til et spesifikt utdanningsprogram).[61] I tillegg finnes 25 %-regelen, som gir elever mulighet til å bruke 25 % av tiden i et fag på et annet fag. Ordningen gjelder på individnivå og kan ikke brukes på klassenivå. Det er strenge regler for slik omdisponering av tid.[62] Ordningen er ikke en rettighet, og det må fattes en administrativ beslutning om at omdisponering skal gis. Enkeltvedtak er ikke tilstrekkelig. Omdisponering fastsettes i skriftlig avtale og gis vanligvis for ett år om gangen. Det er kun tillatt å omdisponere tid mellom fag som har nasjonal læreplan.[63]

Av initierte forsøksordninger finnes forsøket med arbeidslivsfag, som ble innført 1. oktober 2009. Forsøket skal løpe i fire år. Elever på forsøksskolene kan velge arbeidslivsfag alle tre årene på ungdomstrinnet, og faget har et samlet omfang på 227 årstimer over tre år. Elever som velger arbeidslivfag skal jobbe praktisk med arbeidsoppgaver fra yrkesfaglige utdanningsprogrammer i videregående opplæring, med unntak av utdanningsprogrammet medier og kommunikasjon. Nivået på opplæringen skal være tilpasset ungdomstrinnet. Lokalt næringsliv kan involveres.[64] Fra høsten 2012 har skolene anledning til å etablere arbeidslivsfag uten å søke Utdanningsdirektoratet om forsøk.[65]

---

[59] Utkastet finnes på Utdanningsdirektoratet sine hjemmesider: http://www.udir.no/Lareplaner/Forsok-og-pagaende-arbeid/Gjennomgang-av-fem-fag/Veiledende-kjennetegn-pa-maloppnaelse-etter-10-trinn/ (Lesedato: 10.04.2013)
[60] Utdanningsdirektoratet (2009): *Fag- og timefordelingen i grunnopplæringen – Kunnskapsløftet.* URL: http://www.udir.no/upload/Rundskriv/2009/Udir-08-09_fagogtimefordeling.pdf og intervju med ansatt i utdanningsvesenet på nasjonalt nivå
[61] Rundskriv Udir-01-2012. Tilgjengelig på http://www.udir.no/Upload/Rundskriv/2012/Udir-1-2012.pdf?epslanguage=no (Lesedato: 11.04.2013)
[62] Intervju med ansatt i utdanningsvesenet på nasjonalt nivå
[63] Utdanningsdirektoratet (2009): *Fag- og timefordelingen i grunnopplæringen – Kunnskapsløftet.* URL: http://www.udir.no/upload/Rundskriv/2009/Udir-08-09_fagogtimefordeling.pdf
[64] Utdanningsdirektoratet (2009): *Om arbeidslivfag.* URL: http://www.udir.no/Artikler/_Lareplaner/_Forsok/Arbeidslivfag/
[65] Rundskriv Udir 4-2012. Tilgjengelig på http://www.udir.no/Regelverk/Rundskriv/2013/Udir-2-2013-Arbeidslivsfaget/ (Lesedato: 11.04.2013)

9. Evaluering av Kunnskapsløftet 2006-2012

Ulike sider av Kunnskapsløftet har siden reformen ble iverksatt og frem til 2012 blitt evaluert, og resultatene er dokumentert i hele ti evalueringsrapporter. Som vist over i avsnittet om revisjon av læreplaner, har evalueringsresultater ført til nye tiltak i løpet av evalueringsperioden som styrking av grunnleggende ferdigheter i læreplanene. Mer overordnete sammenstillinger og syntetiseringer av evalueringsresultater ble gjort i 2012. Sammenstillinger består både av synteserapporter utarbeidet av forskere, samt Utdanningsdirektoratets egne sammenstillinger basert på deres forståelse av evalueringsresultatene. I det følgende gjøres kort rede for hovedfunn om Kunnskapsløftet primært basert på Utdanningsdirektoratets sammenstilling, og deretter en nærmere redegjørelse av evalueringens funn om implementering av nye læreplaner basert på en synteserapport skrevet av Sivesind (2012).

Sentrale intensjoner med Kunnskapsløftet var å

- styrke de grunnleggende ferdighetene i lesing, skriving, regning, digitale ferdigheter og muntlige ferdigheter
- gjennom nye læreplaner gi tydelige mål for hva elevene skulle lære
- gi økt lokal frihet og ansvar til selv å bestemme arbeidsformer, læremidler og organisering av opplæringen

Noen hovedresultater fra evalueringen er at lærere har blitt langt mer opptatt av hva elevene skal lære enn hvilke aktiviteter som skal gjennomføres i opplæringen. Det er også økt bevissthet og oppslutning om betydningen av grunnleggende ferdigheter i skolene. Vurderingspraksisen er også endret, blant annet som følge av konkrete utviklingsprosjekter knyttet til vurdering for læring.[66] Selv om det er for tidlig å konkludere om konkrete resultater av reformen, tyder evalueringsresultater på at skolen etter Kunnskapsløftet ikke lykkes med å utjevne forskjeller mellom elever med ulik sosial bakgrunn. Det er fremdeles elever fra ressurssterke hjem som gjør det best.[67]

Styring av skolesektoren er også blitt tydeligere. Likevel fikk skoleeiere og skoler lite informasjon i starten av reformen, og det har vært svake forbindelseslinjer mellom skoleeier og skoleleder på en side, og mellom skoleleder og lærernes pedagogiske praksis på den andre siden.[68] Videre har evalueringen avdekket betydelige kompetansebehov på alle nivåer fra lærere, skoleledere og hos skoleeiere.

9.1.1 Implementering av nye læreplaner i reformen

Sivesinds synteserapport baserer seg primært på rapporter fra forskningsprosjektene ARK (Analyse av Reformen Kunnskapsløftet), FIRE (Forvaltningsnivåenes og institusjonenes rolle i implementeringen av Kunnskapsløftet), og SMUL (Sammenhengen mellom undervisning og læring).[69]

Sivesind mener at Kunnskapsløftet representerer en ny type styring basert på en målbasert ansvarsmodell. Læreplanene har gitt et økt profesjonelt ansvar, og dermed frihet, til skoler og skoleeiere i konkretisering av mål og i valg av lærestoff og arbeidsmetoder enn de har hatt tidligere. Samtidig forpliktes skoler og skoleeiere til å

---

[66] «Slik har Kunnskapsløftet endret skolen». Artikkel på Utdanningsdirektoratets hjemmesider. Tilgjengelig på http://www.udir.no/Tilstand/Evaluering-av-Kunnskapsloftet/Slik-har-Kunnskapsloftet-endret-skolen/ (Lesedato: 10.04.2013)

[67] Bakken, A. og Elstad, J.I. (2012). *For store forventninger? Kunnskapsløftet og ulikhetene i grunnskolekarakterer*. NOVA-rapport 7/12.

[68] Aasen et.al. 2012, s 297 i Sivesind, K. 2012, s 22.

[69] Sivesind, K. (2012). *Kunnskapsløftet: Implementering av nye læreplaner i reformen. Synteserapport fra evalueringen av Kunnskapsløftet*. ILS 2012.

gi tilpasset opplæring, og til kontinuerlig oppfølging av elevenes læringsutbytte. Læreplanenes ansvarliggjøring av skoler og skoleeiere med hensyn til hvilke resultater de produserer begrenser således handlingsrommet.

Skoleeiere, skoleledere og lærere har opplevd reformen som krevende[70]. Videre synes det å være store variasjoner i implementering av læreplanene som fremgår av evalueringen. Det kan på den ene siden skyldes at styringsformen er ny og uvant for de som har ansvar for opplæringen på ulike nivåer. Evalueringen viser at skoleeiere ble gitt lite informasjon og vag ansvarliggjøring ved oppstarten av reformen, og det slås fast at det har vært svake forbindelseslinjer mellom skoleeier og skoleleder, og mellom skoleleder og lærere.[71] Evalueringen viser at kommunestørrelse har betydning for kommunenes vurdering av egen kompetanse til å implementere reformen, og hvorvidt de etablerer pedagogiske støttefunksjoner.[72] En sentral konklusjon i evalueringen er at det fremdeles er behov for kompetanseheving på alle nivåer fra lærere til skoleeier.

På den annen side kan mangelfulle og varierende resultater skyldes innrettingen av reformen. For det første påpekes det at den generelle delen av læreplanen lager et uhensiktsmessig skille mellom teoretisk og praktisk kunnskap. Læreplanverket preges av ulike kunnskapssyn der tradisjonell innholds- og kunnskapsorientering fundert i en felles kulturarv kombineres med mulighet for mangfold, differensiering og spesialisering både i innhold, stofftilfang og arbeidsmåter.[73] Det er også uklarheter rundt hvordan grunnleggende ferdigheter skal forstås og hvordan kompetansemål skal integreres i fagene. I norskfaget er det eksempelvis vanskelig å skille mellom grunnleggende ferdigheter knyttet til lesing, skriving og muntlighet og hovedområdene i faget.[74] Samlet sett gir dette konsistensproblemer og fører til tvetydighet for leseren.[75] Forskere bak evalueringen hevder at læreplanen i liten grad viser hvordan kunnskap fra vurderings- og undervisningspraksis og læreplanarbeid skal kobles til læringsutbytte.[76] Grunnleggende ferdigheter ses både som et mål i seg selv, i tillegg til at de er et middel for å nå de faglige kompetansemålene i hvert av fagene. Skoleundersøkelser avdekker store variasjoner i hvordan grunnleggende ferdigheter oppfattes og fortolkes, og at arbeid med ferdighetene i liten grad er et felles anliggende på skolene.[77] En av evalueringsrapportene konkluderer med at de grunnleggende ferdighetenes funksjon og plass i faget er mangelfull. Disse evalueringsresultatene er noe av bakgrunnen for den pågående læreplanrevisjonen for fag.

For det andre er det rettet kritikk mot at kompetansemålene er for abstrakte, og at det er vanskelig å avgjøre ut ifra målformuleringen hvorvidt et mål kan nås. En av evalueringsrapportene konkluderer med at kompetansemålene er generelle og varierende i fokus og form, og at det ikke spesifiseres hvilke kunnskapskrav som skal stilles til elever på de ulike trinnene.[78]

Undersøkelser gjennomført i forbindelse med evalueringen indikerer store forskjeller i systematikk og omfang i elevvurderingen både i grunn- og videregående skoler.[79] Utviklingsprosjekter knyttet til vurderingsarbeid vurderes som nyttige for å endre på dette, og prosjektene har bidratt til å etablere lærende nettverk mellom skoler,

[70] Aasen et.al. (2012, s 293) i Sivesind, K. (2012, s 22).
[71] Aasen et.al. (2012, s 297) i Sivesind, K. (2012, s 22)
[72] Ottesen og Møller (2010, s9) i Sivesind (2012, s 23).
[73] Dale et.al. (2011, s 1 og s 47 ff) i Sivesind (2012, s 17)
[74] Rønning (2008, s 87) i Sivesind (2012,18)
[75] Dale et.al. (2011) i Sivesind (2012, s 17)
[76] Ottesen og Møller (2010, s 9) i Sivesind (2012, s 27)
[77] Aasen et.al. (2012) i Sivesind (2012, s 27)
[78] Sivesind et.al. (2011) i Sivesind (2012, s 16).
[79] Aasen et.al. (2012) i Sivesind (2012, 24)

skoleeiere, universitets- og høgskolesektoren og nasjonale myndigheter. En av evalueringsrapportene konkluderer med at fokuset på vurdering har økt blant lærerne siden reformen ble innført[80], og en aner en endring fra en svært individuell vurderingspraksis mot at elevvurdering er blitt et felles ansvar.[81]

Sivesind påpeker at læreplaner skal kommunisere med alle nivåer, og har et bredere formål enn å styre lærernes aktiviteter i klasserommet. [82] Hun konkluderer med at implementering av Kunnskapsløftet har innrettet skolen i riktig retning med økt fokus på vurdering og læring, men at det samtidig er store forskjeller i hvordan skolene gjør dette i praksis. Samtidig er det mangelfull koordinering av fag, ferdigheter og arbeidsmåter, og lite oppmerksomhet rundt betydningen av prinsipper for organisering av kunnskap og undervisning på et administrativt nivå. Hun hevder derfor at innholdsspørsmålet bør drøftes på et politisk-administrativt nivå, og at erfaringene med å utvikle kriterier for vurdering på lokalt nivå bør inngå i justering av nye læreplaner.

Regjeringens tiltak for veien videre fremgår av St.meld 20 (2012/2013) *På rett vei*. Sentrale tiltak er

- videreføre kompetanse- og utviklingstiltak for skoler og skoleeiere for å sikre god kvalitet på opplæringen over hele landet
- utarbeide en fornyet generell del av læreplanverket for Kunnskapsløftet og Kunnskapsløftet – Samisk slik at den er tilpasset den nye formålsparagrafen for grunnopplæringen, og slik at den møter utfordringene i dagens og framtidens samfunn
- utrede framtidens kompetansebehov og hvilke kompetanser, ferdigheter og kvalifikasjoner som er viktig for å delta i videre utdanning, samfunns- og arbeidsliv

[80] Hodgeson et.al, 2012, s 9)
[81] Ottesen og Møller (2010) i Sivesind (2012, s 29)
[82] Sivesind (2012, s 39)

MEMORANDUM/MEMO

Project	**Kortlægning af curriculum i sammenlignelige lande**
Customer	**Ministeriet for Børn og Undervisning**
Note no.	**1**
Date	**18. April 2013**

1. Landnotat

Den här promemorian innehåller en systematisk genomgång och beskrivning av den svenska grundskolan med särskilt fokus på läroplan och kursplan. Kartläggningen har genomförts av Ramböll Management Consulting i Sverige på uppdrag av Skolestyrelsen under Undervisningsministeriet i Danmark och ska ingå i en samlad kartläggning av de nordiska länderna.

Innehållet i promemorian är i huvudsak baserat på litteraturstudier av tillgänglig data på området. Därutöver har en intervju genomförts med upplysningsavdelningen på Skolverket för att säkra innehållet.

Dato 2010-04-12

Promemorian är beskrivande till sin form. Det handlar således inte om en effektanalys eller utvärdering.

Promemorian är, förutom denna inledning, indelad i följande avsnitt:

2. Styrningsmodell för det obligatoriska skolväsendet
3. Ämnesutbud och timplan
4. Läroplan och kursplan
5. Utvärderingspraktik
6. Erfarenheter med försök

Rambøll
Nørregade 7A
DK-1165 København K

T +45 3397 8200
F +45 3397 8233
www.ramboll-management.dk

2. Styrningsmodell för det obligatoriska skolväsendet

I detta avsnitt beskrivs den svenska grundskoleutbildningen, avseende styrningsmodell och styrande dokument. Därefter redogörs kortfattat för vilka typer av utbildning som ingår i det obligatoriska skolväsendet, dvs. grundskola, grundsärskola, specialskola och sameskola. I den beskrivningen ingår även aktuell statistik för grundskolan, så som antal skolor, medelstorlek på skolan och antal elever.

Styrningsmodell

Det svenska utbildningssystemet består av förskoleverksamhet, skolbarnsomsorg, skola och vuxenutbildning. Dessa skoltyper ingår i ett målstyrt system där riksdag och regering fastställer nationella mål och riktlinjer i till exempel skollag och läroplaner. Därefter är det upp till kommuner och andra huvudmän att fördela resurser och organisera verksamheterna utifrån lokala förutsättningar så att nationella mål och krav kan uppfyllas. Skolorna väljer utifrån detta ett arbetssätt som passar dem och deras verksamhet specifikt. Det är således ett decentraliserat utbildningssystem som råder i Sverige där kommunen eller den fristående huvudmannen är ansvarig för att verksamheten uppfyller nationella krav.

Den statliga myndigheten Statens skolverk (hädanefter Skolverket) följer upp, utvärderar förskoleverksamhet, skolbarnsomsorg, skola och vuxenutbildning. Skolverket har även i uppdrag att ta fram kursplaner, betygskriterier och allmänna råd med mera. Myndigheten för skolinspektion (hädanefter Skolinspektionen) har tillsynsansvar över förskoleverksamhet, skolbarnsomsorg, skola och vuxenutbildning. Det betyder att myndigheten kontrollerar att kommunen eller den fristående skolan följer de lagar och andra bestämmelser som gäller för verksamheten.

Lagstiftning på utbildningsområdet

Utbildningen i Sverige styrs utifrån följande lagar och riktlinjer, vilka beskrivs kortfattat nedan[1]:

Skollag (1985: 1100): Skollagen är stiftad av riksdagen och innehåller de grundläggande bestämmelserna om förskoleverksamhet, skolbarnomsorg, skola och vuxenutbildning.

Läroplan: En läroplan är en förordning som utfärdas av regeringen och som ska följas av samtliga skolor. Det finns fyra läroplaner - en för förskolan (Lpfö 98), en för grundskolan, grundsärskolan, sameskolan och specialskolan (Lgr 11), en för gymnasieskolan och gymnasiesärskolan (SKOLFS 2011:144) och en för vuxenutbildningen (SKOLFS 2012:18). De olika läroplanerna länkar i varandra genom att de är uppbyggda på likartat sätt och uttrycker samma syn på kunskap, utveckling och lärande. I läroplanerna beskrivs verksamheternas värdegrund och uppdrag samt mål och riktlinjer för arbetet.

Förordningar: En förordning är en rättsregel som beslutas av regeringen. Det finns många olika förordningar för förskoleverksamhet, skolbarnsomsorg, skola och vuxenutbildning, t.ex. förordningar om de olika skolformerna, om statsbidrag och försöksverksamheter i förskola, skola och fritidshem. Dessa, liksom lagar och andra föreskrifter, är bindande och ska följas.

(**Program- och examensmål**: endast för gymnasie- och gymnasiesärskolan)

Föreskrifter: En av de statliga myndigheterna på utbildningsområdet, Skolverket kan besluta om bindande bestämmelser som kallas föreskrifter. En förutsättning är att regeringen har meddelat i en förordning att Skolverket får alternativt skall ge ut föreskrifter

[1] Kapitel 1. http://www.riksdagen.se/sv/Dokument-Lagar/Lagar/Svenskforfattningssamling/Skollag-2010800_sfs-2010-800/?bet=2010:800#K1

inom ett visst område. De kan exempelvis gälla kursplaner och betygskriterier, bidrag för elever i fristående skolor och statsbidrag.

Kursplaner och betygskriterier: Kursplanerna kompletterar läroplanen och anger målen för skolans undervisning i varje enskilt ämne. Kursplanerna är utformade så att de lämnar visst utrymme för en lokal och professionell tolkning. Dessutom finns betygskriterier som anger vilken kunskapsnivå som eleven ska uppnå i den betygsskalan A-E, F- där A är högsta betyg och F är underkänt. Betyg ges först i slutet av årskurs 4-6.

Allmänna råd: Skolverkets allmänna råd är rekommendationer till stöd för hur skolans författningar (lagar, förordningar och föreskrifter) kan tillämpas i praktiken. Ett allmänt råd måste utgå från en författning. Den anger hur man kan eller bör handla och syftar till att påverka utvecklingen i en viss riktning och att främja en enhetlig rättstillämpning av olika lagar. Dessa bör således följas såvida skolan inte kan visa att man handlar på andra sätt som leder till att kraven i bestämmelserna uppnås. Det finns till exempel allmänna råd om bedömning och betygsättning och om alla former av förskoleverksamhet och skolbarnsomsorg.

Övriga lagar: Det finns slutligen ett antal övriga lagar och regler som även reglerar skolverksamheten, t.ex. arbetsmiljölagen och internationella överenskommelser som FN:s förklaring om mänskliga rättigheter och Barnkonventionen.

Det obligatoriska skolväsendet i Sverige
Alla barn mellan sju och sexton år i Sverige är skolpliktiga. Om föräldrarna önskar det kan barnen få börja skolan redan när de är sex år. Kommunerna är skyldiga att anordna plats för alla sexåringar i förskoleklassen. Till den obligatoriska skolan räknas grundskolan, sameskolan, specialskolan och den obligatoriska särskolan.

Den 1 juli 2011 trädde nya samlade läroplaner för **grundskolan, grundsärskolan, sameskolan** och **specialskolan** ikraft. Läroplanen för de olika skolorna skiljer sig delvis men i huvudsak är grundskolan tillgänglig för alla barn mellan 7 och 16 år. Grundskolan är en nioårig obligatorisk skolform och är formellt sett inte uppdelad i stadier. Den består av 9 läsår, och varje läsår består av en höst- och en vårtermin. De allra flesta skolor i Sverige är kommunala, vilket innebär att det är kommunen som är huvudman för verksamheten.

Det vanligaste är enligt Skolverket att barnen går i en kommunal skola nära hemmet. Eleverna och deras föräldrar har även rätt att välja en annan kommunal skola, eller en från kommunen fristående skola. Fristående skolor är öppna för alla och måste vara godkända av Skolinspektionen. Undervisningen i fristående skolor ska i huvudsak ha samma mål som kommunala skolor, men kan ha en inriktning som skiljer sig från de kommunala skolornas. Det är vanligt att fristående skolor har en annan inriktning än den kommunala grundskolan, t.ex. speciell pedagogik (Montessori eller Waldorfpedagogik), etnisk inriktning eller är skolor med en viss religiös prägel. Den fristående skolan ska följa skollagens gällande bestämmelser.[2]

Den obligatoriska särskolan omfattar två parallella skolformer, grundsärskolan och träningsskolan. Barn med utvecklingsstörning går i den obligatoriska särskolan, varav barn med lindrig utvecklingsstörning går i grundsärskolan och barn som inte kan gå i grundsärskolan går i träningsskolan.

I grundsärskolan undervisas eleven i stort sett i stort sett samma ämnen som i grundskolan. Ämnenas innehåll och omfattning ska anpassas till elevens egna förutsättningar. Istället för

[2] http://www.skolverket.se/forskola-och-skola/fristaende-skolor

enskilda ämnen rymmer träningsskolans kursplan de fem ämnesområdena; estetisk verksamhet, kommunikation, motorik, vardagsaktivitet och verklighetsuppfattning.[3]

Sameskolan omfattar årskurserna 1-6. Utbildningen i sameskolan ska ge samers barn en utbildning med samisk inriktning som i övrigt motsvarar utbildningen till och med årskurs 6 i grundskolan. I årskurserna 7-9 går samers barn i grundskolan.[4]

För barn med dövhet eller hörselskada, grav språkstörning eller synskada i kombination med ytterligare funktionshinder finns specialskolan. **Specialskolan** omfattar 10 läsår och ska motsvara grundskolan så långt det är möjligt.[5]

Aktuell statistik på grundskolan

Nedan ges en redogörelse i tabellform för statstik inom det obligatoriska skolväsendet. Den första tabellen visar information rörande antal skolor och elever under läsåret 2012/13.[6]

Tabell 1 Skolor och elever läsåret 2012/13

Skolform / Utbildningsnivå		Antal kommuner	Antal skolenheter	Antal elever	Antal elever per Kommun	Antal elever per Skolenhet
Samtliga skolformer	1)	**290**	**10 559**	**1 381 936**	**.**	**.**
därav						
Förskoleklass		290	3 734	107 662	371	.
Grundskola		290	4 909	899 185	3 101	183
Grundsärskola		280	630	9 643	34	15
Specialskola		8	10	457	57	46
Gymnasieskola		267	..	351 641	1 317	..
Gymnasiesärskola		180	302	8 778	49	29
Särvux		203	.	4 570	23	.
Förskoleklass		**290**	**3 734**	**107 662**	**371**	**.**
Grundskola		**290**	**4 909**	**899 185**	**3 101**	**183**
därav						
Årskurs 1-3		290	3 865	316 269	1 091	82
Årskurs 4-6		290	3 941	295 572	1 019	75
Årskurs 7-9		290	1 827	287 344	991	157
Grundsärskola		**280**	**630**	**9 643**	**34**	**15**
Specialskola		**8**	**10**	**457**	**57**	**46**
Gymnasieskola		**267**	**..**	**351 641**	**1 317**	**..**
därav						
Kommun		261	..	257 352	986	..
Landsting		17	..	2 752	162	..
Fristående	2)	115	..	91 537	796	..
Gymnasiesärskola		**180**	**302**	**8 778**	**49**	**29**
Särvux		**203**	**.**	**4 570**	**23**	**.**
därav						
Grundsärskolenivå		181	.	2 213	12	.
Träningsskolenivå		150	.	1 170	8	.
Gymnasiesärskolenivå		141	.	1 506	11	.

Tabell 2 Elever med undervisning i modersmål och svenska som andraspråk (SVA) 2012/13

[3] http://www.skolverket.se/forskola-och-skola/sarskola/om-grundsarskolan/tionde-aret-i-grundsarskolan-1.130361

[4] http://www.skolverket.se/forskola-och-skola/grundskoleutbildning/om-sameskolan

[5] http://www.skolverket.se/forskola-och-skola/grundskoleutbildning/om-specialskolan

[6] http://www.skolverket.se/statistik-och-analys/statistik/2.4290/2.4292

Modersmål	Antal elever berättigade till modersmålsundervisning	Andel (%) berättigade av samtliga elever	Deltagare i modersmålsundervisning: Antal	Andel (%) av samtliga elever	Andel (%) av berättigade elever	Andel (%) utanför timplanebunden tid	Deltagare i SVA: Antal	Andel (%) av samtliga elever
Totalt	**184 203**	**20,5**	**98 910**	**11,0**	**53,7**	**54,9**	**68 683**	**7,6**
10 största modersmålen								
Albanska	7 176	0,8	4 795	0,5	66,8	48,3	3 239	0,4
Arabiska	33 695	3,7	23 545	2,6	69,9	53,1	17 423	1,9
Bosniska/Kroatiska/Serbiska	11 326	1,3	5 690	0,6	50,2	61,5	3 605	0,4
Engelska	11 608	1,3	5 167	0,6	44,5	53,4	1 701	0,2
Persiska	6 659	0,7	3 775	0,4	56,7	60,5	2 019	0,2
Finska	7 999	0,9	3 553	0,4	44,4	36,6	1 078	0,1
Polska	6 213	0,7	3 621	0,4	58,3	55,9	2 132	0,2
Somaliska	10 164	1,1	7 145	0,8	70,3	47,7	6 985	0,8
Spanska	10 696	1,2	5 082	0,6	47,5	60,3	2 540	0,3
Turkiska	6 072	0,7	3 712	0,4	61,1	57,2	2 905	0,3
Övriga språk (147 st.)	72 225	8,0	32 810	3,6	45,4	57,9	24 992	2,8
Ospecificerade språk	370	0,0	15	0,0	4,1	46,7	64	0,0

Angående lärartäthet läsåret 2012/13

Skolverket har tidigare redovisat lärartätheten genom måttet antal lärare (omräknat till heltidstjänster) per 100 elever. Från och med läsåret 2012/13 redovisas måttet omvänt. Det vill säga antal elever per lärare (omräknat till heltidstjänster).

Lärartätheten är i stort sett oförändrad jämfört med föregående år. I både grundskolan och i gymnasieskolan går det ungefär 12,1 elever per lärare. Antalet elever per lärare skiljer sig åt mellan kommunala och fristående skolor. För båda dessa skolformer, precis som föregående läsår, är lärartätheten lägre i de fristående skolorna.

Lärartätheten varierar i de andra skolformerna. I specialskolan har lärarna 2,9 elever per lärare medan det i förskoleklass finns 15,5 elever per lärare. Inom vuxenutbildningarna har lärarna ännu fler elever per lärare. I kommunal vuxenutbildning har lärarna 21,7 elever per lärare och i utbildning i svenska för invandrare har varje lärare i genomsnitt 26,3 elever.

3. Ämnen och timplan i grundskola

I följande avsnitt redogörs för ämnesutbud samt minsta garanterade undervisningstid för respektive ämne i den svenska grundskolan.

I Sverige finns ett obligatoriskt ämnesutbud för grundskolan beslutat i Skollagen (1985:110), bilaga 3. Där finns även en timplan för grundskolan som helhet.[7] Timplanen anger den minsta garanterade tid som eleverna har rätt att få lärarledd undervisning i olika ämnen. Fristående skolor får dock idag avvika från timplanen om de har tillstånd från Skolinspektionen. Det är upp till styrelsen för utbildningen, dvs. utbildningsnämnden för en kommunal skola och styrelsen för en fristående skola, att besluta om fördelningen av timmar för respektive ämne över årskurserna 1-9. Därefter fastställer rektor ett schema för utbildningen. Styrelsens beslut måste utgå från målen i kursplanerna där det finns beskrivet vilken kunskapsnivå eleven ska uppnå för att nå Godkänt i ämnet i årskurs tre, fem och/eller nio. Målen i kursplanen är således styrande för beslutet som fattas av styrelsen för utbildningen. Det är vidare upp till kommunen eller den fristående huvudmannen att följa

[7] Skollagen 1985:110, bilaga 3

upp och säkerställa att eleverna får den minsta garanterade undervisningstiden. Det finns inte någon formaliserad uppföljning av undervisningstiden i de nationella styrdokumenten.

Grundskolan karaktäriseras sedan länge av en sammanhållen ämnesstruktur, vilket kan härledas till tanken om likvärdighet. Det finns dock ett visst utrymme för individuella val, främst genom språkvalet och det som kallas elevens val. Utöver de obligatoriska ämnena måste skolan erbjuda undervisning i modersmålet för elever med annat modersmål än svenska.

I tabellen nedan redogörs för utbildningens omfattning i grundskolan i timmar om 60 minuter för ämnen och ämnesgrupper samt totalt antal timmar. Vid skolans val får antalet timmar i timplanen för ett ämne eller en ämnesgrupp minskas med högst 20 procent. De timmar i timplanen som är avsatta för elevens val innebär att den enskilda eleven kan fördjupa studierna i ett eller flera ämnen. Dessutom kan en skola, inom givna ramar, använda timmar till att ge vissa ämnen mer tid än den som är angiven i timplanen. På det sättet får skolans undervisning en särskild profil, eller inriktning.

Tabell 2 Ämnen och minsta garanterade undervisningstid i grundskolan[8]

Bild	230
Hem- och konsumentkunskap	118
Idrott och hälsa	500
Musik	230
Slöjd	330
Svenska eller svenska som andraspråk	1 490
Engelska	480
Matematik	900
Geografi, historia, religionskunskap, samhällskunskap	885
Biologi, fysik, kemi, teknik	800
Språkval	320
Elevens val	382
Totalt garanterat antal timmar	**6 665**
Därav skolans val	600

[8] http://www.skolverket.se/forskola-och-skola/grundskoleutbildning/om-grundskolan/timplan-for-grundskolan-1.159242

Läroplaner och kursplaner
I detta avsnitt ges en beskrivning av hur läroplanerna är uppbyggda och en kortare sammanfattning om vad de innehåller. Redovisningen innehåller även en beskrivning av hur kursplanerna och kunskapskraven är uppbyggda. Här exemplifieras med kursplanerna för svenska, matematik, engelska och biologi för grundskolan. Sammanfattningen nedan bygger på ”Läroplan för grundskolan, förskoleklassen och fritidshemmet 2011” (Lgr11) som i sin helhet står att finna på http://www.skolverket.se/publikationer?id=2575.

Sammanfattningsvis anger läroplanen skolans värdegrund samt grundläggande mål och riktlinjer medan kursplanen för respektive ämne anger syfte, övergripande mål och centralt innehåll. Kursplanerna kompletteras av kunskapskrav.

Läroplan
Det finns samlade läroplaner för förskolan, grundskolan inklusive förskoleklassen och fritidshemmet, grundsärskolan, specialskolan, samt sameskolan. Läroplanen består av *skolans värdegrund och uppdrag*, *övergripande mål och riktlinjer för utbildningen* samt *kursplaner*. Dessa är förordningar vilka fastställs av regeringen. I läroplanen ingår även grundskolans kunskapskrav som är myndighetsföreskrifter som i sin tur fastställs av Skolverket. Sedan 1998 omfattar läroplanen för grundskolan även förskoleklassen och fritidshem. Den senaste läroplanen för grundskolan (Lgr11) trädde i kraft den 1 juli 2011.

Skolans värdegrund och uppdrag
Skolväsendet vilar på demokratins grundvalar och ska förmedla de grundläggande värden som det svenska samhället består av. Utbildningen ska främja alla elevers lärande samt utveckla individer utifrån en etik med fokus på rättskänsla, generositet, tolerans och ansvarstagande. Skolan ska gestalta och förmedla värden som människolivets okränkbarhet, individens frihet och integritet, alla människors lika värde, jämställdhet mellan kvinnor och män samt solidaritet med svaga och utsatta. Skolans uppgift är att låta varje enskild elev finna sin unika egenart och därigenom kunna delta i samhällslivet genom att ge sitt bästa i ansvarig frihet. Undervisningen i skolan ska vara icke-konfessionell.

Skolan ska främja medmänsklighet och förståelse för andra människor, och omsorg för den enskilde individen ska prägla verksamheten. Ingen ska utsättas för diskriminering eller annan kränkande behandling på grund av kön, etnisk tillhörighet, religion eller annan trosuppfattning, könsöverskridande identitet eller uttryck, sexuell läggning, ålder eller funktionsnedsättning. Skolan ska understödja en medvetenhet om de värden som ligger i en kulturell mångfald, tillsammans med en förmåga att inse och leva sig in i andras villkor och värderingar. Den ska vara öppen för skilda uppfattningar och uppmuntra att dessa förs fram.

Skollagen föreskriver att utbildningen ska vara likvärdig oavsett var i landet den anordnas. Normerna för likvärdigheten anges genom de nationella målen. Detta innebär inte att undervisningen ska utformas på samma sätt överallt utan att hänsyn ska tas till elevernas individuella behov och förmågor. Skolan har också ett ansvar för att motverka traditionella könsmönster och ska ge eleverna frihet att utveckla sina intressen oberoende av könstillhörighet. Skolans uppdrag är inte enbart att förmedla kunskap, utan också att använda sig av ett arbetssätt i ständig utveckling som förbereder eleven för ett aktivt samhällsliv. I samarbete med hemmen ska skolan stärka elevernas individuella förmåga att orientera sig i en komplex verklighet, med ett stort informationsflöde och en snabb förändringstakt. Skolan ska vara en trygg miljö där skapande arbete och lek är undervisningens huvudingredienser som ska stimulera elevers nyfikenhet och självförtroende att vilja pröva egna idéer och lösa problem.

Övergripande mål och riktlinjer för utbildningen

Läroplanen innehåller dels mål som skolan ansvarar för att varje elev efter genomgången grundskola ska uppnå dels riktlinjer som lärare och personal på skolan arbetar utifrån. Nedan visas exempel på hur mål jämfört med riktlinjer är uttryckta i läroplanen.

- Mål: *”Skolan ska ansvara för att varje elev efter genomgången grundskola kan lära, utforska och arbeta både självständigt och tillsammans med andra och känna tillit till sin egen förmåga.”*
- Riktlinjer: *”Läraren ska organisera och genomföra arbetet så att eleven utvecklas efter sina förutsättningar och samtidigt stimuleras att använda och utveckla hela sin förmåga.”*

Läroplanen innehåller följande avsnitt:
- Normer och värden
- Kunskaper
- Elevernas ansvar och inflytande
- Skola och Hem
- Övergång och samverkan
- Skolan och omvärlden
- Bedömning och betyg
- Rektorns ansvar.

Kursplaner
Kursplanerna för grundskolan utfärdas av regeringen och anger målen för undervisningen i varje enskilt ämne. Kursplanerna ska även visa hur ett ämne eller en kurs kan bidra till att eleverna utvecklas i enlighet med de värden och mål som anges i läroplanen. Kursplanerna är utformade så att de lämnar stort utrymme för en lokal och professionell tolkning.

Kursplanen för varje ämne är uppbyggd efter liknande struktur. Kursplanen inleds med en kortare inledning angående ämnets syfte och vilken relevans det finns för eleven att utveckla en ökad kunskap inom ämnet. Vidare följer vilka möjligheter som eleven ska ges för att kunna utveckla efterfrågad förmåga. Med andra ord anges vilken inriktning skolan bör ha på undervisningen genom att fastställa vilka kvaliteter som eleven ska utveckla genom utbildningen. Detta presenteras i ”Centralt innehåll”; det innehåll som lärarna ska behandla i sin undervisning. Det centrala innehållet är för de flesta ämnen uppdelat för årskurserna 1-3, 4-6 och 7-9. De kvaliteter som eftersträvas stiger med de högre årskurserna. Förutom kursplanerna finns kunskapskrav för årskurs 3, 6 och 9. I de två senare anges vad som krävs för att uppnå betygen A till E (F är en underkänd nivå). I årskurs 3 ges inte betyg, men det finns kunskapskrav i ämnena svenska, svenska som andraspråk, matematik, samt för de natur- och samhällsorienterade ämnesgrupperna.

Ämnet svenska
Kursplanen för ämnet svenska inleds med en diskussion kring språk som redskap för människan och vilken relevans det har för att få en större förståelse av vår värld. Syftet med undervisningen i ämnet är att främst för att eleverna ska ges möjlighet att utveckla språket för att tänka, kommunicera och lära. Eleverna ska stimuleras att uttrycka sina åsikter och tankar, både i tal och i skrift, samt ges möjligheten att utveckla kunskaper om hur man kritiskt värderar information från olika källor. Eleven ska ges möjlighet att använda och utveckla sin förmåga att tala, lyssna, se, läsa och skriva, uppleva och lära av skönlitteratur, film och teater, samt öka sin förståelse för hur sättet man kommunicerar på kan få konsekvenser för andra människor. Kursplanen beskriver vidare betydelsen av en utvecklad språkförmåga, bland annat för en stärkt medvetenhet om och tilltro till den egna språkliga och kommunikativa förmågan. Avsnittet avslutas med en kort beskrivning av hur kultur och språk är förenade med varandra.

Vidare beskrivs vilken inriktning skolan bör ha på undervisningen i ämnet svenska genom att fastställa det centrala innehåll, de kvaliteter, som skolan ska sträva mot att eleven

utvecklar. Det centrala innehållet är uppdelat för årskurs 1-3, 4-6 och 7-9 och delas in i kategorierna; *Läsa och skriva, Tala, lyssna och samtala, Berättande texter och sakprosatexter, Språkbruk* och *Informationssökning och källkritik*. I de högre årskurserna och för respektive kategori, så ökar ambitionsnivån för vad skolan ska sträva efter i utbildningen.

Det finns kunskapskrav för godtagbara kunskaper i slutet av årskurs 3. Sedan följer de kunskapskrav som krävs för betyget A till E i slutet av årskurs 6 och 9. Kraven ökar med de stigande årskurserna. Vad gäller inriktningen på kunskapskravet fastställer kursplanen att värderingen i ämnet svenska gäller hur långt eleven har kommit i sin språkliga utveckling och i sin litterära medvetenhet, samt i sin kännedom om olika mediers former och syften. Dessutom läggs vikt vid kunskap om det svenska språket i förhållande till andra språk. Den språkliga och litterära kompetensen, graden av självständighet i att pröva och använda en vid repertoar av redskap liksom förmågan att språkligt behärska olika situationer är utgångspunkter för bedömningen av kunskapen i svenska.

Ämnet engelska
Kursplanen i engelska inleds med en diskussion kring språk som redskap för människan och vilken relevans det har för att få en större förståelse av vår värld. Bland annat står det att kunskaper i engelska ökar individens möjligheter att ingå i olika sociala och kulturella sammanhang och att delta i internationellt studie- och arbetsliv.

Vidare beskrivs vad skolan ska ge eleverna för möjligheter för att kunna utveckla till exempel en ”allsidig kommunikativ förmåga” där strävan är att uppnå ”språklig säkerhet och att kunna använda olika strategier för att stödja kommunikationen och lösa problem när språkkunskaperna inte räcker till.” Själva kärnan i undervisningen är att eleven i mötet med talat språk och texter ska ges möjlighet att utveckla förmågan att sätta innehållet i relation till egna erfarenheter, livsvillkor och intressen. Eleven ska också ges möjlighet att utveckla kunskaper om och förståelse för olika livsvillkor samt sociala och kulturella företeelser i områden och i sammanhang där engelska används.

Sammanfattningsvis redogörs för vad skolan ska sträva efter att kunna erbjuda eleverna och vilka förutsättningar för eleverna som undervisningen ska bidra med.
I nästa avsnitt av kursplanen för engelska redogörs för vad skolan ska arbeta mot, vad det centrala innehållet i undervisningen ska vara för elever i årskurs 1-3, 4-6 och 7-9. Detta är i sin tur uppdelat i tre delar; *Kommunikationens innehåll,* där de ämnesområden och situationer som eleven ska hantera beskrivs; *Lyssna och läsa – reception,* där en beskrivning ges av vad eleven ska klara av när det gäller läsning av till exempel instruktioner eller förståelsen av en text; *Tala, skriva och samtala – produktion och interaktion,* där fokus ligger på förmågan att presentera och beskriva, snarare än på dialog. För varje årskursintervall så ökar ambitionen för vad skolan ska sträva mot.

Det finns kunskapskrav som beskriver vad som krävs för att uppnå betyg A till E i slutet av årskurs 6 och 9.. Inriktningen på bedömningen är elevens förmåga att behärska receptiva, interaktiva och produktiva färdigheter. Bedömningen ska även inriktas på hur väl eleven har utvecklat sin förståelse för olika sammanhang och områden där engelska används. Slutligen ska bedömningen även inriktas på hur den egna språkinlärningen går till, liksom på förmågan att använda olika tillvägagångssätt och lämpliga hjälpmedel för att lösa uppgifter som har skiftande karaktär och syfte.

Ämnet matematik
Kursplanen för matematik inleds med en text angående ämnets historia, karaktär och funktion i samhället. Ämnet kan bidra till att ge eleverna ”möjlighet att uppleva estetiska värden i möten med matematiska mönster, former och samband”.

Syftet med undervisningen är att eleven i grundskolan ska utveckla sådana kunskaper i matematik som behövs för att fatta motiverade beslut i vardagslivets många valsituationer, och för att kunna följa och delta i beslutsprocesser i samhället. Eleven ska kunna använda digital teknik för att lösa problemställningar, samt för att kunna tolka och värdera data och resultat. Det anges vidare att utbildningen ska ge en god grund för studier i andra ämnen, fortsatt utbildning och ett livslångt lärande. I syftesbeskrivningen fastställs att matematiken är en viktig del av vår kultur och utbildningen ska ge insikt i ämnets betydelse, sammanhang, relevans och roll i vårt samhälle.

I nästa avsnitt av kursplanen beskrivs det centrala innehåll som skolan ska rikta sin undervisning mot i ämnet matematik. Här anges vilken inriktning skolan bör ha på undervisningen genom att fastställa vilka kvaliteter som skolan ska sträva mot att eleven utvecklar. För respektive årskurs, 1-3, 4-6 och 7-9, ökar omfånget av det centrala innehållet. Vidare beskrivs detta under kategorier såsom till exempel *Taluppfattning och tals användning, Algebra* och *Sannolikhet och statistik*.

I slutet av årskurs 3 är vissa kunskapskrav för godtagbara kunskaper angivna.. Därefter görs en genomgång av de kunskapskrav som krävs för att uppnå betyg A till E i slutet av årskurs 6 och 9. Inriktningen på bedömningen är elevens förmåga att använda, utveckla och uttrycka kunskaper i matematik samt förmåga att följa, förstå och pröva, samt föra de matematiska resonemangen framåt. Kunskapskraven för de högre betygen innefattar till exempel mer välutvecklade och väl underbyggda resonemang.

Ämnet biologi
Kursplanen för ämnet inleds med en beskrivning av naturvetenskapen samt vilken betydelse kunskap i biologi har för utvecklingen inom områden som hälsa, naturbruk och miljö. Syftet med undervisningen i ämnet är att få kunskap om naturen och människan, samt att eleverna ska utveckla kunskaper som ger förutsättningar att hantera praktiska, etiska och estetiska valsituationer som rör hälsa, naturbruk och ekologisk hållbarhet. Eleverna ska även ges möjlighet att utveckla en ingående kännedom om biologins begrepp och modeller, jämte kunskap om hur dessa fungerar utifrån erfarenheter från undersökningar av naturen och människan.

Vidare beskriver kursplanen för ämnet biologi vilken inriktning skolan bör ha på undervisningen genom att fastställa vilka kvaliteter som skolan ska sträva mot att eleven utvecklar genom utbildningen. Detta är ämnets centrala innehåll. Ämnet delas här upp i kategorier som till exempel; *Året runt i naturen, Kropp och hälsa* och *Material och ämnen i vår omgivning.* För respektive årskurs; 1-3, 4-6 och 7-9 ökar omfånget av det centrala innehållet i var kategori.

För årskurs 3 finns kunskapskrav för de naturorienterande ämnen, dvs. biologi, fysik och kemi. Vidare finns de kunskapskrav som krävs för att uppnå betyg A till E i slutet av årskurs 6 och 9. Kunskapsbedömningen baseras på elevens naturvetenskapliga förståelse av omvärlden och på hur eleven underbygger resonemang om till exempel människokroppen eller organismers liv. Inriktningen av bedömningen är även elevens kunskap om naturvetenskapens och biologins karaktär, samt naturvetenskapen som mänsklig och social aktivitet.

Mål år 3– genomförd förändring
Regeringen ville 2006 komplettera styrningen av skolan med ytterligare ett avstämningstillfälle i syfte att försäkra sig om en, på verksamhetsnivå, lägsta nivå av uppföljning av elevernas kunskapsutveckling. Med avstämningstillfälle menas här nationella prov för årskurs 3. Regeringen gjorde bedömningen att denna uppföljning var av särskild vikt i ämnena matematik och svenska. I det dåvarande styrsystemet för de aktuella ämnena var de nationella provtillfällena knutna till mål att uppnå för det femte respektive nionde skolåret. För att det skulle vara möjligt att utveckla nationella prov för det tredje skolåret

fick den statliga myndigheten Skolverket i uppdrag att ta fram mål att uppnå för det tredje skolåret.

Från och med höstterminen 2008 finns mål att uppnå för matematik, svenska och svenska som andraspråk i årskurs 3. Nationella prov i denna årskurs hölls för första gången vårterminen 2009.

Skälen till förändringen som regeringen angav i regeringsuppdraget till Skolverket var att genom att införa regelbundna obligatoriska kontrollstationer skulle elevernas utveckling mot målen stödjas och en lägsta garanterad nivå för lärarnas kontinuerliga utvärdering och uppföljning sättas. En sådan ordning, menade regeringens, skapar ökad nationell likvärdighet och ger förutsättningar att minska variationen i elevernas resultat. Det stod vidare angivet i skälen till regeringsuppdraget att i årskurs 3 bör fokus ligga på läsförståelse, skrivkunnighet och matematik, eftersom dessa förmågor är avgörande för att kunna tillgodogöra sig den fortsatta utbildningen.[9]

Individuell utvecklingsplan med skriftliga omdömen – genomförd förändring
Regeringen meddelade 9 juni 2008 föreskrifter om förändringar avseende individuella utvecklingsplaner (IUP). De nya föreskrifterna kompletterade redan existerande förordning om individuella utvecklingsplaner och innebar bland annat att i grundskolan och motsvarande skolformer inom det offentliga skolväsendet samt i fristående skolor ska lärare lämna *skriftliga* omdömen om elevens kunskapsutveckling i relation till målen i de ämnen och ämnesområden som eleven har fått undervisning i. Lärarna ska även sammanfatta vilka insatser som behövs för att eleven ska nå målen och i övrigt utvecklas så långt som möjligt inom ramen för läroplanen och kursplanen. Det tidigare förbudet mot att de skriftliga omdömena fick vara betygsliknande togs bort. Den förändrade förordningen om individuella utvecklingsplaner med skriftliga omdömen trädde i kraft 1 juli 2008.[10]

Regeringen anger i sina skäl till den förändrade IUP:n med skriftliga omdömen bland annat att en tydlig utvärdering och information är viktiga förutsättningar för att det ska bli möjligt att upptäcka kunskapsluckor och att ge eleven stöd. Utformningen av den individuella utvecklingsplanen är dock inte nationellt formaliserad och standardiserad. Det innebär att elevens resultat ska beskrivas i förhållande till hur långt eleven nått på sin väg till målen enligt den lokala pedagogiska planeringen på skolan.

4. Utvärderingspraktik

I detta avsnitt redogörs för den utvärderingspraktik som används i grundskolan för att utvärdera huruvida målen i läroplan och kursplan uppfylls samt vilka specifika utvärderingsverktyg som används, på såväl central som lokal nivå.

Uppföljning av elevers kunskaper utifrån mål i läroplan och kursplan görs i första hand av den enskilde läraren. För att stödja den processen finns vissa nationellt formaliserade system. Därutöver genomför skolor och kommuner uppföljningar och utvärderingar av elevernas resultat i den lagstadgade kvalitetsredovisningen. Slutligen genomförs uppföljning och utvärdering på den nationella nivån, av bland annat Skolverket och Skolinspektionen. På nationell nivå görs dels uppföljning av elevernas kunskaper och dels uppföljning av skolans verksamhet i vidare bemärkelse, så som efterlevnad av lagar och regler.

Nedan redogörs för vilken uppföljning med tillhörande verktyg som görs inom ramen för uppföljningen av elevers kunskaper respektive skolans verksamhet.

Utvecklingssamtalet och den individuella utvecklingsplanen

[9] http://ncm.gu.se/media/ncm/dokument/regeringsuppdrag.pdf, sid 2-3
[10] http://regeringen.se/content/1/c6/09/59/33/422eb9d2.pdf

Skolverket har tagit fram nya allmänna råd för utvecklingssamtalet och den skriftliga individuella utvecklingsplanen, som i första hand syftar till att ge eleven överblick och förståelse för sitt eget lärande. Nytt är att det finns allmänna råd kring utvecklingssamtalet. Den skriftliga individuella utvecklingsplanen innehåller två delar, dels omdömen, dels en planering för elevens fortsatta arbete mot läroplanens mål.

Utvecklingssamtalet
Minst en gång varje termin ska eleven, elevens vårdnadshavare och läraren ha ett utvecklingssamtal. Samtalet handlar både om elevens kunskapsutveckling och sociala utveckling i förhållande till läroplanen, kursplaner och kunskapskrav.

Utvecklingssamtalet är en mycket betydelsefull del av arbetet med elevens skriftliga individuella utvecklingsplan. Läraren upprättar utvecklingsplanen tillsammans med eleven och vårdnashavaren vid utvecklingssamtalet. Den består av två delar: omdömen och framåtsyftande planering.

Omdömen och betyg
Läraren ger omdömen om elevens kunskapsutveckling. Omdömen är inte betyg även om de kan vara betygsliknande. Det innebär att de inte kan jämföras mellan skolor. I kommentarerna framgår hur omdömen bör skrivas när undervisningen sker ämnesövergripande.
Den framåtsyftande planeringen innebär att läraren sammanfattar och beskriver vilka insatser som ska göras av skolan samt vad eleven och vårdnadshavaren kan göra för att eleven ska utvecklas så långt som möjligt.

Slutligen bedöms eleverna från och med årskurs 6 utifrån en sexgradig **betygsskala** (A-E, F) där exempelvis nationella prov ligger till grund för bedömningen av betyg.

Nationellt provsystem 2012/13
På nationell nivå följs elevernas kunskaper upp med hjälp av olika verktyg. I Skolverkets uppdrag ingår det att förvalta och vidareutveckla det **nationella provsystemet**. Syftet med det nationella provsystemet ska enligt Skolverket vara att bidra till ökad måluppfyllelse för eleverna, förtydliga målen och visa på elevers starka och svaga sidor. Det syftar vidare till att konkretisera kursmål och betygskriterier, stödja en likvärdig och rättvis bedömning och betygssättning samt ge underlag för en analys av i vilken utsträckning kunskapsmålen nås på skolnivå, på huvudmannanivå och på nationell nivå.[11]

Ämnesprov i årskurs 3
I årskurs 3 genomförs ämnesproven i matematik, svenska och svenska som andraspråk.

Ämnesprov i årskurs 6
I årskurs 6 genomförs ämnesproven i engelska, matematik, svenska och svenska som andraspråk, ett av ämnena biologi, fysik eller kemi samt ett av ämnena geografi, historia, religionskunskap eller samhällskunskap. Skolverket fördelar ämnesproven i de samhälls- respektive naturorienterande ämnena.

Ämnesprov i årskurs 9
I årskurs 9 genomförs ämnesproven i engelska, matematik, svenska och svenska som andraspråk, ett av ämnena biologi, fysik eller kemi samt ett av ämnena geografi, historia, religionskunskap eller samhällskunskap. Skolverket fördelar ämnesproven i de samhälls- respektive naturorienterande ämnena.

Sameskolan
i sameskolan genomförs ämnesproven i årskurserna 3 och 6.

[11] http://www.skolverket.se/prov-och-bedomning/nationella-prov/mer-om-nationella-prov

Specialskolan
I specialskolan genomförs ämnesproven i årskurserna 4, 7 och 10.

Skolverket genomför även **nationella utvärderingar**, på antingen myndighetens egna eller regeringens initiativ. Ett exempel på en nationell utvärdering som Skolverket har genomfört är utvärderingen av grundskolan (NU- 03) som gjordes 2003. Det är den mest omfattande utvärdering av grundskolan som någonsin har genomförts. Syftet var att ge en helhetsbild av måluppfyllelsen i grundskolan, ämnesvis och i ett övergripande perspektiv, visa på förändringar sedan den nationella utvärderingen 1992 samt peka på behov av utvecklingsinsatser.[12]

Skolverket ansvar därutöver för två **internetbaserade databaser** som samlar statistik och gör det möjligt att analysera data på en aggregerad nivå. Resultat- och kvalitetsinformationssystemet (SIRIS), innehåller information om skolors resultat och kvalitet. Det finns statistik om elever, lärare, resultat och kostnader i grund- och gymnasieskolan. I databasen finns även olika dokument samlade som beskriver kvalitetsutvecklingen i kommuner och skolor samt olika analyser och utvärderingar. Det går att få fram information på nationell, kommunal och på skolnivå.

Genom Skolverkets arbetsverktyg för lokala sambandsanalyser (SALSA) kan kommuners och skolors samlade betygsresultat bedömas ur ett nationellt perspektiv. Skolverket menar att genom att ta hänsyn till skolors elevsammansättning kan kommuner och skolor få en ny utgångspunkt för diskussion och analys av skolors förutsättningar, processer och resultat. Betygsresultaten presenteras för fristående och kommunala skolor med årskurs 9.

Sverige deltar även i tre **internationella mätningar** av elevers resultat. Till att börja med deltar Sverige i PISA (Programme for International Student Assessment) som är ett OECD-projekt med syftet att undersöka i vilken grad lands utbildningssystem bidrar till att femtonåriga elever är rustade att möta framtiden. Genom olika prov undersöks elevernas förmågor i tre kunskapsområden; matematik, naturvetenskap och läsförståelse. Studien genomförs var tredje år. Vidare deltar Sverige i TIMMS vilket är en studie som undersöker elevers kunskaper i matematik och NO i årskurs 4 och årskurs 8. Studien organiseras av The International Association for the Evaluation of Educational Achievement (IEA) och genomförs vart fjärde år.[13] Därutöver deltar Sverige i PIRLS, vilket är en studie som undersöker elever läsförståelse i årskurs 4. Även denna studie anordnas av IEA och genomförs vart femte år.[14] Slutligen deltog Sverige i undersökningen ESLC 2011 som är en studie med syftet att ge EU:s medlemsländer jämförande data över elevers kunskaper i främmande språk. Projektet är initierat av EU- kommissionen.[15]

Systematiskt kvalitetsarbete
Skollagen, som trädde i kraft 1 juli 2011, innehåller ett tydligt krav på ett systematiskt kvalitetsarbete. I och med detta har kravet på kommunal skolplan och kvalitetsredovisning avskaffats. Skolinspektionen ansvarar emellertid för att det systematiska kvalitetsarbetet upprätthålls.

Varje huvudman, rektor och förskolechef har ett ansvar att systematiskt planera, följa upp och analysera resultaten i förhållande till nationella mål, krav och riktlinjer. Detta ska vara underlag för insatser så att verksamheten kan utvecklas och nå uppsatta mål och resultat.

---

[12] http://www.skolverket.se/om-skolverket/publicerat/visa-enskild-publikation?_xurl_=http%3A%2F%2Fwww5.skolverket.se%2Fwtpub%2Fws%2Fskolbok%2Fwpubext%2Ftrycksak%2FRecord%3Fk%3D13169

[13] http://www.skolverket.se/statistik-och-analys/internationella-studier/timss

[14] http://www.skolverket.se/statistik-och-analys/internationella-studier/pirls

[15] http://www.skolverket.se/statistik-och-analys/internationella-studier/internationella-sprakstudien

Av den nya skollagen framgår också att en viktig del av kvalitetsarbetet på enhetsnivå är att det bedrivs tillsammans med personal, barn och elever samt vårdnadshavare. Det måste därför finnas organisation och resurser som underlättar utvecklingsarbetet både på huvudmannanivå och på enhetsnivå. Processen i det systematiska kvalitetsarbetet är cyklisk. Den rymmer faserna:[16]

- *Var är vi?*
- *Vart ska vi?*
- *Hur gör vi? och*
- *Hur blev det?*

Den sista fasen ”hur blev det?” kan på sätt och vis beskrivas som ett nytt ”var är vi?”. På så vis löper processen vidare. I den här modellen har vi sorterat den information och de olika publikationer, verktyg etc. som kan vara till stöd i det systematiska kvalitetsarbetet enligt den cykel som kvalitetsarbetet följer.

Var och en av de olika faserna rymmer i sin tur flera moment. Att arbeta med systematiskt kvalitetsarbete förutsätter, som namnet säger, systematik och kontinuitet. Modellen är därför utformad så att den ska kunna stödja det systematiska arbetet som leder fram till kvalitetssäkring och utveckling. Det systematiska kvalitetsarbetet gynnas av att faserna och de moment som ingår i dem behandlas i tur och ordning. Men modellen är tänkt att kunna ge stöd i just den del av processen som man befinner sig i. Man behöver alltså inte ”börja om från början” i och med att man använder sig av detta verktyg. Men ofta kan det finnas skäl att backa i processen; att hoppa fram och tillbaka mellan de olika faserna och momenten.[17]

5. Erfarenhet med försök

Ramböll har i kartläggningen av det svenska utbildningssystemet inte funnit någon studie, i den svenska kontexten, som har undersökt värdet av läroplaner och kursplaner för elevernas resultat i grundskolan.

[16] http://www.skolverket.se/skolutveckling/kvalitetsarbete/systematiskt-kvalitetsarbete-1.107118

[17] http://www.skolverket.se/skolutveckling/kvalitetsarbete/ipraktiken

Project **Mapping of curriculum, Country report, Finland**
Customer **The Ministry of Children and Education**
Date **22. March 2013**
From **Rambøll Management**

1. Country report, Finland

This country report contains a systematic review and description of Finland's basic education for 7-16-year-olds in comprehensive schools i.e. primary and lower secondary school ("peruskoulu" in Finnish) in relation to particular course range and curriculum. The country report includes besides subject range and curriculum also a series of adjacent issues in order to clarify whether - and if so why - we have chosen different approaches in the Nordic countries.

The report is mainly based on desk research. This means gathering and mapping existing documents and other data produced mainly by the Ministry of Education, The Finnish National Board of Education plus few interviews done face to face with the interviewees.

The approach is mainly descriptive. It is therefore not an evaluation or an impact analysis of the work with courses and curriculum in the countries, unless existing documentation or research exists in single countries.

The report is part of a comprehensive mapping of the Nordic countries' approaches to course ranges and curricula. The mapping is carried out by Rambøll Management Consulting on behalf of the Government Agency for Primary and Lower Secondary School (Skolestyrelsen). The mapping shall contribute with new knowledge to the ongoing 360-degree service check of the Danish primary and secondary school.

The report is beside this introduction divided into the following sections:

2. Characteristics and management model
3. Subject range
4. Minimum number of hours
5. Curriculum – objectives and content
6. Evaluation practice
7. Experiences with experiments.

The key terms used in report

The key terms used in this report are very shortly defined as follows:

Curriculum
The national core curriculum is the national framework and it forms the basis on which the local curriculums are formulated. The education provider is responsible for the preparation and development of the local curriculum. So the national and local decisions concerning the adaption of the national curriculum constitute a whole that guides basic education.

Syllabus
Syllabus is the main content of a subject or a course. The contents are defined in the national core curriculum.

2. Characteristics and management model

This section will give a brief characterisation of the Finnish comprehensive schools i.e. primary and lower secondary school especially focusing on the management model of the primary and lower secondary school in the country.

A brief description of the primary and lower secondary school in the country

Primary and lower secondary school is in Finland called as comprehensive school and as basic education as well and it is based on a single structure. Compulsory education starts in the year when a child becomes seven years of age and ends when the syllabus of basic education has been completed or 10 years after the beginning of compulsory education. Basic education does not lead to any special qualification, because there are not any final assessment in the Finnish basic education. However the passing of basic education gives eligibility for all upper secondary education and training. Nearly all children complete their compulsory schooling.

Basic education is divided into grades which are year classes. Teaching is organised as class instruction mainly provided by class teachers in grades 1 - 6 and as subject-specific instruction mostly given by subject teachers in the upper grades (7 - 9). In grades 7 - 9 the pupils also have a tutor, that is, one of the teachers assigned the overall responsibility of one group. The difference between class teacher and tutor is that class teacher teaches most of the subjects of one class which is also assigned to be on teacher’s responsibility (as an “own class”) whereas the tutor has only the role of tutor. Tutor is a teacher who is usually specialised in tutoring. The tutoring in the form of a special subject is usually teached only on grades 7 - 9. On the grades 1-6 it is integrated to the other subjects and teached by the class teacher. Both class teachers and subject teachers are highly qualified. As a rule, all teachers have a Master's-level university degree.

In case basic education completers feel that their skills are not quite up to the standard required by further education, they can supplement their knowledge and improve on the school-leaving certificate marks by enrolling in additional voluntary education as an extra year, so-called 10th grade. This voluntary education is intended to help and encourage young people to continue their

studies at the upper secondary level. About three per cent of pupils avail themselves of this possibility.

In addition to the system of grades and classes described earlier, it is also possible to make different class arrangements for reasons of expediency by forming combined classes where pupils of different ages may be taught together in a multi-grade arrangement, particularly in small schools. With the exception of special needs education, there are no provisions governing the size of teaching groups.

Schools operate five days a week, and the minimum number of lessons per week varies from 19 to 30, depending on the grade level and number of optional subjects taken. In 2011, there were 2 719 comprehensive schools, and the network covers the whole country. About 25 percent of the schools have below 50 pupils and nearly 20 percent of the schools have 50 - 99 pupils. In addition to public schools, there were 59 private schools in 2007.

The basic data about the Finnish basic education is gathered in the table below:

Table 1. Basic facts (Source: The organization of the education towards the 2020. The Finnish National Board of Education 2012:2. (in Finnish only).

Number of public schools	2 719 / year 2011
Number of private schools	59 / year 2007
Average comprehensive school size	189 pupils / year 2011; 166 pupils / year 2007
Number of grades/classes	1 - 9 are mandatory, 10 th is optional
Number of pupils	541 000 / year 2011
Amount of pupils in schools offering education in Swedish	Pupils about 6 %,
Amount of pupils in schools offering education in Sami	Pupils under 0.1%
Pupils' age starting school	6 - 7 years
Class sizes (how many pupils/teacher ratio)	The class size varies in different communities, in Finnish speaking schools it's about 20 pupils and in Swedish speaking schools about 17,4 pupils

The management model

The government determines the general objectives of basic education and the division of classroom hours between different subjects. Education is the responsibility of the Ministry of Education. The Finnish National Board of Education (FNBE) works with the Ministry to develop educational aims, content and methods for primary, secondary and adult education. In addition, each of the six Regional State Administrative Agencies has an Education and Culture Department which deals with basic education with the response of the cases of reclamation and petition and the evaluation of the regional availability and quality as well. Also the municipalities and schools have a crucial role implementing basic education since the curriculum is to be formulated also at

those levels. The local authorities (education providers) decide how much the curriculum will be formulated by the region or school. The coherence of course range for basic education requires cooperation among different teacher groups in drafting the content of courses. Also the pupils' parents and guardians must be able to influence the educational objectives. The pupils may also be involved in the curriculum work.

The municipalities have an important role being obligated to organise basic education free of charge for school-aged children living within their respective areas. Pupils are free to enrol in another school if it has places available. Local authorities determine how much autonomy is passed to schools. The schools have right to provide educational services according to their own administrative arrangements, as long as the basic functions, determined by law, are carried out.

As mentioned, the local authorities have a statutory duty to provide education for children of compulsory school age living in their areas. The language of instruction is mostly Finnish or Swedish, but also the Sami, Roma or sign language may be used. In basic education, pupils are entitled to the welfare services they need to be able to follow teaching. These include services recorded in the national core curriculum, health care under the Public Health Act, and support to child-rearing under the Child Welfare Act. There are also around 15 000 school-age children with immigrant background, whose integration is supported in many ways.

As a conclusion it can be stated that in Finland the FNBE has the most crucial role in the planning of national core curriculum and course range. The other key actor in the system is the municipalities, which adapt the national curriculum to the local needs and other contents.

The change in management and steering during the past decades

There have been crucial changes in the managing model during the past 30 years. The most prominent change during last decade relates to the responsibility of the schools and teachers, which has enhanced remarkably. As the specialists interviewed to this report emphasized, the teachers have the responsibility and authority to implement and adapt the curriculum.

The change in steering model is described in the following table:

Table 2. Change in steering model (Source: The Finnish Education and PISA, Ministry of Education Publications, Finland 2009:46. Northern Lights on PISA 2006. Nordic Council of Ministers, Copenhagen 2009)

Situation in 1970s and 1980s	Situation in 1990s/2000
Centralised control and decision-making - Centralised curriculum - Long-term plans - Budgeting based on expenditures - External evaluation: inspections	**Decentralised management** - Self-governance - School-based curricula - Distinctive educational profiles of schools - Self-direction and self-regulation - Learning organisation as a mode instutional structure - Self-evaluation and own control - Performance-based funding

Legislation and other decisions needed

Basic education is governed by the Basic Education Act (628/1998) and Basic Education Decree (852/1998) and the Government Decree on the General National Objectives and Distribution of Lesson Hours in Basic Education (1435/2001[J1]). The national core curriculum prepared by the Finnish National Board of Education are based on these. The latest National Core Curriculum for grades 1 - 9 was taken into use by 1 August 2006.

As a conclusion Finnish national and local decisions concerning basic education constitute a whole that guides basic education. These decisions are:

- The Basic Education Act and Decree
- The Government Decree on the General National Objectives and Distribution of lesson hous in Basic Education as Referred to in the Basic Education Act
- The national core curricula for basic education
- The local curriculum approved by the education provider
- The curriculum-based annual plan conforming to section 9 of the Basic Education Decree.

The Finnish National Board of Education has begun to prepare the new national core curriculum for basic and pre-primary education. The new curriculum will be based on the Decree on national objectives and distribution of teaching hours in basic education, issued by the Government in June 2012. The renewed core curriculum will be completed by the end of 2014. New local curricula based on this core curriculum should be prepared by the beginning of school year 2016 - 2017.

Other information

The Finnish basic school system is very subject-based, this means that the instruction is usually separated into different subjects. This means that the subjects are teached as quite independent ones and the interaction and cooperation between subjects is very dependent on the teachers understanding and ability to handle subjects. On the grades 6-9 the cooperation between subjects requires also the cooperation of subject teachers. On the grades before (grades 1 - 6) it is mostly about the ability of the class teacher to consist coherent coalitions of subjects. The national curriculum is however very subject-based as it defines the content of each subject in detail. At the same time teachers have a considerable responsibility with implementing the curriculum of the municipality. The pedagogical instructions given to schools are very narrow. As a conclusion, it can be stated that there have not been any major changes in the national curriculum and course range on recent years. The basic educational system could be described to be quite stable.

Underlying values of basic education are human rights, equality and democracy. Teaching of the subjects is politically neutral and non-denominational. Basic education must provide an opportunity for diversified growth, learning, and the development of a healthy sense of self-esteem, so that the pupils can obtain the knowledge and skills they need in life, become capable of further study, and, as involved citizens, develop a democratic society. Basic education:

- promotes a sense of community, responsibility and respect for the rights and freedoms of the individual,
- helps to support the pupils' part in the Finnish society and the globalising world and
- helps to promote tolerance and equality by giving girls and boys the ability to act on the basis of equal rights and responsibilities in society, working life, and family life.

The values that underlie education are to be specified in the local basic education curriculum. They are to be incorporated into the objectives and contents of basic education and into everyday activity.

3. Subject range

This section gives a description of the course range in the country.

The Basic Education Act regulates the subjects included in the national core curriculum and pupil counselling. In grades 1 - 6, pupils usually receive the same education, but schools may focus on different subjects in different ways due to the flexible time allocation. In grades 7 - 9, more elective subjects are included in the curriculum.

The Basic Education Act regulations stipulate such matters as the core subjects taught to all pupils, and the distribution of teaching hours between various subjects. The core subjects taught to all pupils in the basic education are:

- the mother tongue and literature (Finnish or Swedish),
- the other official language,
- one foreign language (free of choise),
- environmental studies,
- health education,
- religion or ethics,
- history,
- social studies,
- mathematics,
- physics,
- chemistry,
- biology,
- geography,
- physical education,
- music,
- art and crafts and
- home economics.

In addition, there are taught optional subjects, which are decided locally by local authorities and schools. In these cases the optional subjects are defined and integrated to the local subject range. In other words, the optional subjects are defined by municipalities. Every municipality has to define:

- the name of the optional subject,

- the content of it and
- the grade level at which the subject is to be offered.

Also the school in which the optional subject is offered has to be defined.

This means that at national level there does not exist any list of the optional subjects of the Finnish basic school system. The baseline is that optional subjects have to support the basic education, and the Government Decree 1435/2001 defines the combined minimum number of weekly lessons in optional subjects and the distribution of that number of weekly lessons. The optional subjects have to be defined so that they are among categories as follows:

- subjects are part of specialized or applied syllabus,
- modules formed from several subjects,
- foreign language and
- subjects connected to information technology.

It can be stated that the system with optional subjects have been criticised for too wide freedom given to municipalities with arranging optional subjects. Finland is a country of many small-sized municipalities[1], and this can jeopardize the equality of pupils. Some of the small municipalities do not have the resources to offer as many optional subjects as the majority of municipalities. The issue of the optional subjects have been widely discussed on recent years, and the general opinion has mainly been on the side of more firm national steering. It is very likely that there will be change in this in a few years, since it has been seen very important that pupils should be given more equal variety of subjects, to enhance the possibility of pupils to decide about the subjects.

In the table below is a list of the mandatory subjects of Finnish basic education. The optional subjects cannot be listed due to the reason mentioned earlier. Marking which subjects are studied in which class is complicated, and the table is not unambiguous for that part. This is because subjects in basic education are grouped into sections of classes, and it is the local curriculum which defines when each subject is taught. A more informative and accurate table is presented in the chapter 4 (table 3).

[1] 320 municipalities in the year 2013.

Table 3. Mandatory subjects

		Mandatory subjects 1-9									10th class
		1	2	3	4	5	6	7	8	9	10
	Mother tongue and literature	x	x	x	x	x	x	x	x	x	x
	A-language	(x)[2]	(x)[3]	x	x	x	x	x	x	x	x
	B-language[4]							x	x	x	x
	Mathematics	x	x	x	x	x	x	x	x	x	x
Environmental studies	Biology and geography	x	x	x	x	x	x	x	x	x	x
	Physics and chemistry					x	x	x	x	x	x
	Health education							x	x	x	x
	Religion or ethics	x	x	x	x	x	x	x	x	x	x
	History and social studies					x	x	x	x	x	x
Arts, crafts and physical education	Music	x	x	x	x	x	x	x	x	x	x
	Visual arts	x	x	x	x	x	x	x	x	x	x
	Crafts	x	x	x	x	x	x	x	x	x	x
	Physical education	x	x	x	x	x	x	x	x	x	x
	Home economics							x	x	x	x
	Educational and vocational guidance							x	x	x	x
	Optional subjects The range of optional subjects is decided locally.	x	x	x	x	x	x	x	x	x	x

The current course range was implemented in 2001. The course range before that was valid during the period 1993 - 2001. Both the current and preceding course range includes 222 weekly hours in a year and there are not any very relevant changes between those two course ranges. One weekly hour means 38 lessons (=hours). The main change concerned the distribution of lesson hours.

Since year 2001 the basic education has formed an integral whole. Formerly (before year 2001) the basic school was divided in two, covering grades 1 - 6 and 7 - 9. Since year 2001, the course range and distribution of hours has been focused at all grades 1 - 9 as whole. The subjects are now grouped into sections, which also gives local authorities and schools some room and freedom in the implementation. Also, the amount of lessons in mother tongue and literature (+2), mathematics (+1) and history and social studies (+1) were enhanced. Health education was taken into the subject range as a new subject. Also, the logic of offering optional subjects was improved. Before, pupils could choose the maximum on 20 weekly lessons during the basic education. In the

[2] A-language on the firs two grades is a rare possibility.

current subject range, the amount of optional subjects has to be at least 13 weekly lessons during the basic education.

4. Minimum number of hours

Following the above, this section gives a description of requirements for number of hours, especially for the selected courses.

The Government decides on the overall time allocation by defining the minimum number of lessons of core subjects during basic education. The present distribution of lesson hours was confirmed by the Government in 2001 and implemented together with the latest national core curriculum.

The instruction of subjects in basic education is grouped into sections as indicated by the vertical lines in the table below. In each section the minimum amount of instruction is marked numerically in terms of weekly lessons per year. A weekly lesson per year indicates 38 lessons.[5]

[5] According to the specialists' interviewed, there are quite severe problems in comparing the minimum numbers of lesson hour between different countries. The method an logic of defining the amount of hours as well as the content of subjects varies so much.

Table 4. Distribution of lesson hours in basic education (Source: The Government Decree on the General National Objectives and Distribution of Lesson Hours in Basic Education)

Subject	1	2	3	4	5	6	7	8	9	
Mother tongue and literature	14		14			14				42
A-language	----------		8				8			16
B-language	----------								6	6
Mathematics	6		12			14				32
Environmental studies Biology and geography Physics and chemistry Health education	Environmental and natural studies 9				3 2		7 7 3			31
Religion or ethics	6					5				11
History and social studies	----------				3		7			10
Music Visual arts Crafts Physical education	Arts, crafts, and physical education 26			4- 4- 4- 8-	30		3- 4- 7- 10-			56
Home economics	----------						3			3
Educational and vocational guidance	----------						2			2
Optional subjects									(13)	13
The pupil's minimum amount of lessons	19	19	23	23	24	24	30	30	30	222
Voluntary A-language	----------				(6)		(6)			(12)

- - = The subject is not taught in the year-class in question unless otherwise specified in the local curriculum.
( ) = The subject is taught as an optional subject

5. Curriculum

This section gives a description of the country's work with curriculum (objectives and content).

General information about curriculum and objects

The national core curriculum is determined by the Finnish National Board of Education. It includes the objectives and core contents of mandatory subjects, as well as the principles of pupil assessment, special-needs education, pupil welfare and educational guidance. The principles of a good learning environment, working approaches as well as the concept of learning are also addressed in the core curriculum. The objective is to increase pupils' curiosity and motivation to learn, and to promote their activeness, self-direction, and creativity by offering interesting challenges and problems. It could be summarized that the three main purposes of the national curriculum are to act as steering and managing tool in the basic school system, to define the

knowledge base of the education and to provide pedagogical knowhow and methods to the teachers.

The education providers, usually the local education authorities in municipalities and the schools themselves draw up their own curricula for basic education within the framework of the national core curriculum. The extent the municipalities and schools use the possibility of local adaption varies very much. It is fairly common that small municipalities and schools take the national curriculum as it is because of the lack of resources.

The national core curriculum emphasises the active role of the pupil as the organiser of his/her own structure of knowledge. The teacher's role is to be the one who directs the studies and plans learning environments. The core curriculum stresses also that teaching and working methods should foster the readiness to learn and the development of cognitive skills as well as the skills to acquire and adapt information. Teachers themselves can choose the teaching methods they use in order to achieve the objectives stated in the curriculum. The national core curriculum includes the guidelines for choosing the methods.

Content of the National Core Curriculum

The present national core curriculum for basic education was confirmed in January 2004, and it was introduced in schools in August 2006. The National Board of Education has confirmed a new framework curriculum for comprehensive education. The national framework curriculum forms the basis for drawing up local curricula, which is done by municipalities and schools.

According to the national core curriculum for Basic Education 2004 for example the following factors must be evident in the basic education curriculum adapted by the municipalities and schools:

- values and underlying principle,
- general educational and teaching objectives,
- language programme,
- lesson-hour distribution to be observed locally,
- implementation of cross-curricular themes,
- instruction in optional subjects,
- principles of curriculum formulation and
- instruction of pupils requiring special support and pupils belonging to different language and cultural groups.

Each subject is described in the National Core Curriculum for Basic Education 2004 by defining:

- the subject in general,
- the objectives, what pupils should learn each class,
- core contents with short definitions of each content and
- final-assessment criteria for a grade of 8.

One powerful tool in guiding teachers work set by the national curriculum is the criteria for the evaluation of pupils' work and results. Numerical grading is set from 4 to 10 and the grade of

eight (8) is the description of good performance. The requirements for achieving the grades are very specific and also include numerous hints for the teachers on how the curriculum should be implemented.

In addition to the main content of the curriculum, there are also cross-curricular themes in the national core curriculum. This integrating instruction represents central emphases of the educational and teaching work. The themes are to be implemented in core and optional subjects, from the perspectives characteristic of those subjects, and in a manner required by the pupil's developmental phase. Cross-curricular themes in national Curriculum are:

- growth as a person,
- cultural identity and internationalism,
- media skills and communication,
- participatory citizenship and entrepreneurship,
- responsibility for the environment, well-being and a sustainable future,
- safety and traffic and
- technology and the individual.

Participatory citizenship and entrepreneurship (above mentioned cross-curricular themes) can also be taken as an optional subject.

The general opinion has been that the cross-curricular themes are right and needed. However, the implementation in the schools has been considered varied too much. Also the outcomes of implementation of cross-curricular themes have varied. The setting of cross-cultural themes could for decades be seen as sort of compromise and a result of the discussion between the need of very subject-based course range and the need of more compiled and coherent whole.

<u>Short descriptions of the contents of the native language, mathematics, natural science and English</u>

The national curriculum defines the objectives, core contents and descriptions of good performance (grade 8) by different group of grades, depending on the subject.

Native Language
The national curriculum specifies 11 different syllabuses for the subject of mother tongue and literature: Finnish, Swedish, Sami, Romany, Finnish sing language, other mother tongues, Finnish and Swedish as second language, Finnish for Sami pupils and Finnish and Swedish for users of sign language.

Mother tongue and literature is considered as informational, artistic and skill subject that acquires its content from linguistics, the study of literature and the communication sciences. The foundation of the subject is a broad conception of text and it’s task is defined as to develop language-based study and interaction skills systematically.

The core contents set to the grades 1 - 2 are specified under following themes: 1. Interaction skills, 2. Reading and writing, 3. Literature and language. The headlines of core contents for the grades 3 - 5 and 6 - 9 are similar with each other, of course the content inside the headlines

varies: 1. Interaction skills, 2. Text comprehension, 3. Preparing compositions and oral presentation, 4. Information management skills, 5. Tasks and structure of language, 6. Relationship with language, literature and other culture.

Mathematics
The overall objective is to develop the pupil's creative, and precise thinking and guide the pupil in finding and formulating problems, and in seeking solutions to them. The importance of mathematics is perceived broadly.

The core tasks for the grades 1 - 2 are to develop of mathematical thinking; practice concentrating, listening and communicating; and acquisition of experience as a basis for the formulation of mathematical concepts and structures. The core contents set to the grades 1 - 2 are specified under following themes: 1. Numbers and calculation, 2. Algebra, 3. Geometry, 4. Measurement, 5. Data processing and statistics.

The core tasks for the grades 3 - 5 to develop mathematical thinking by introducing the learning of mathematical models of thinking, strengthening basic calculations and the concept of number and by providing experiences as a basis for assimilating the concepts and structures of mathematics. The core contents set to the grades 3 - 5 are specified under following themes: 1. Numbers and calculation, 2. Algebra, 3. Geometry, 4.Data processing, statistics and probability.

On the grades 6 - 9 the core tasks are to deepen understanding of mathematical concepts and furnish adequate basic capabilities encompassing the modelling of everyday mathematical problems, the learning of mathematical models of thinking, and practice with remembering, focusing and precise expression. The core contents set to the grades 6 - 9 are specified under following themes: 1. Thinking skills and methods, 2. Numbers and calculation, 3. Algebra, 4. Functions, 5.Geometry, 6. Probability and statistics.

Natural Science

Natural sciences include biology, geography, physics, chemistry and health education. The subjects mentioned are integrated to the curriculum by subject or subject group depending on the grade.

On the grades 1 - 4 biology, geography, physics, chemistry and health education comprise an integrated subject group called Environmental and natural studies. The perspective of sustainable development is included to the subject. The objectives of the broad subject group are that pupils get to know and understand nature and the built environment, themselves and other people, human diversity and health and disease.

On the grades 5 - 6 biology and geography combine their own subject group. Health education is incorporated into instruction of biology and geography. The core contents are 1. Organisms and living environments, 2. Anatomy, vital functions, growth, development, and health of the human being, 3. Biodiversity, 4. Europe as part of the world, 5. Diversity of human life and living environments in the world.

On the grades 5 - 6 also as well as physics and chemistry are combine one subject group in the curriculum. The core subjects are 1. Energy and electricity, 2. Scales and structures and 3. Substances around us.

On the 7 - 9 grades biology and geography are described as individual subjects in the curriculum. Biology's core contents during mentioned three grades are 1. Nature and ecosystem, 2. Life and evolution, 3. The human being, 4. The common environment. The same with the geography are 1. Earth – the human being's home planet, 2. Europe, 3. Finland in the world, 4. The common environment.

Also physics and chemistry are described as individual subjects in the curriculum for grades 7 - 9. Physics is defined by following core contents 1. Motion and force, 2. Vibrations and wave motion, 3. Heat, 4. Electricity, 5. Natural structure. Chemistry's core contents are 1.Air and water, 2. Raw material and products, 3. Living nature and society.

English

National curriculum doesn't include English as an individual subject. English is mentioned as part of the section of foreign languages. However, it has some special emphasize since the categorization with the description of good performance is divided in two parts: 1. English, 2. Other languages. Otherwise the core contents or objectives are not individualized for English.

English could be chosen (and very often is) for the first foreign language, which is called A-language. A-language is defined as a core subject and it could also be chosen as an optional subject. A-language instruction could be commenced on grade 1 or 3.

If English is not chosen as A-language by the pupil, then it becomes the second foreign language, this means B-language. The instruction of B-language begins on the grade 7.

<u>Different approaches and ongoing reforms</u>

At the time, there are lot of discussion about the objectives of basic education as well as distribution on lesson hours. The topic is very acute, since the Government has set a taskforce to make suggestions about new distribution of lessons as well as the economical and other implications of that. The Government decision was made in June 2012 and it will be implemented at schools in the beginning of August 2016. The aim of the reform is to strengthen the role of subjects concerning art and crafts. One central issue is also the course range and the content of the subjects. It has been discussed about composing wider but still coherent entities from the subjects. The present curriculum is very subject-based and the lessons do not often cross the borders of other subject. One issue emphasized in public discussion is the amount of lesson hours for optional subjects. This also divides opinions.

In addition, The Ministry of Education informed of new recommendations concerning the quality of basic education on June 2009. Quality criteria have been prepared for basic education and it aims to guarantee the quality of educational services at national and local levels. The quality criteria is not legally binding and it focuses on ten evaluation areas: governance, personnel, economic resources, evaluation, implementation of the curriculum, instruction and teaching arrangements,

support to learning, growth and well-being, inclusion and influence, school-home cooperation and safety of the learning environment. The quality criteria will assist in the objective of harmonising decisions pertaining to the provision of basic education in municipalities and, on the other hand, will support the implementation of decisions.

It is stated and also emphasized by the experts interviewed that the Finnish basic education system is very knowledge and fact oriented. The role of innovative pedagogical methods might in some cases be too narrow. There is a long tradition of teachers' strong role and the trust in the teaching profession in the Finnish school system. The trust gives schools and independent teacher's lot of space to plan and implement the education and to adapt the content of the curriculum considering the competence and needs of pupils. On the other hand, the freedom is a two-sided sword, since it requires work and also questioning and reforming the methods used. The strengthening of information society brings new challenges to the schools with many new methods exploiting ICT. With the vast freedom of teachers this might end up with inequalities among pupils. The need to enhance the national steering to ensure equal opportunities to pupils is stated quite often. It is highly possible that this will be the trend in near future.

6. Evaluation practice

This section describes the country's practice regarding the evaluation of the chosen courses' objectives and curricula within the area of primary and lower secondary school.

The Finnish basic education system is mainly evaluated by the Finnish National Board of Education (FNBE) and the Educational Evaluation Council, which is a leading independent specialist organisation for educational evaluation and development. Also the Regional State Administrative Agencies have a role in the evaluation.

The aims of the evaluations conducted by the FNBE are to give reliable analysis about the state of the knowledge of the pupils in the end of sections (in other words grouped sections of subjects) and in the end of the last, ninth, grade. The evaluation is based on the national curriculum and the criteria of the good performance set in the curriculum.

The evaluation is based on sampling method. The test exams are conducted to a sample of certain age group in 150 - 350 schools. It covers about 4000 - 6000 pupils, this means about 5 % of pupils in chosen grade and 15 - 20% of the schools. The sample is chosen so that the results can be generalised to the whole peer group. Test exams have been executed since 1998, so far there had been over 30 evaluation projects. So the evaluation based on sampling is not done each year on each subject. In the Evaluation Plan for the years 2012 - 2015 set by the Ministry of Education and Culture there are defined 11 different follow-up evaluations.

The Educational Evaluation Council is the other official evaluator and it works in connection with the Ministry of Education. The Council's tasks are

1. To assist the Ministry of Education and to support education provides in matters concerning educational evaluation;
2. To make an action plan for external educational evaluation in accordance with the guidelines and financial resources set by the Ministry of Education;

3. To make proposals for the development of educational evaluation and to promote educational evaluation research and co-operation.

The Educational Evaluation Council was conducting an evaluation of the functionality of the national core curriculum of pre-primary and basic education commissioned by the Ministry of Education. The project was carried out during 2009 - 2010. The objective of this evaluation project was the curriculum system of pre-primary and basic education and the distribution of lesson hours in basic education. The evaluation mentioned focused on: 1) the realization of the will of the education policy in drawing up the national core curriculum, 2) the success of the process of preparing and carrying out the national core curriculum and 3) the functionality of the curricula that have been formulated according to the national core curriculum, from the points of views of the National Board of Education, the organizers of education, schools, teachers, pupils and their parents. It also aimed at supporting the implementation of the curricula and the distribution of lesson hours, strengthening the pedagogically continuous basic education and supporting national and local evaluation that are founded on the curriculum.

As mentioned earlier, the Regional State Administrative Agencies have also a role in evaluation. In the Evaluation Plan for years 2012 - 2015 the task of the Agencies during those years is to conduct an evaluation of the regional availability of the education.

There is not any systematic leaving exams or other methods evaluation the basic education in Finland. Finland has scored very well in international comparisons, such as the OECD PISA programme. Finnish pupils figured at the top all the lists in key subjects, and differences between pupils, schools and regional were comparatively very small. It was stated in the interviews that the success in international comparisons have been one of the reasons, why there has not been so much pressure for developing more evaluation and testing systems. It was emphasized that the appreciation towards the work of teachers is high, and teachers have strong academic freedom to apply methods within the limits of national core curriculum. The authorities have wanted to preserve the authority and profession of teachers by keeping the evaluation actions at minimun level.

7. Experiences with experiments

In Finland, there have not been conducted experiments with course ranges and curriculum in the past decades.

Sources

Amendments and additions to the national core curriculum for basic education. The Finnish National Board of Education 2011. (in Finnish only)

Basic Education Act 628/1998 Amendments up to 1136/2004.

Information on Education Systems and Policies (EURYDICE).

National Core Curriculum for Basic Education 2004, National core curriculum for basic education intended for pupils in compulsory school. The Finnish National Board of Education 2004.

National summary sheets on education systems in Europe and ongoing reforms, Finland 2009.

Northern Lights on PISA 2006. Nordic Council of Ministers, Copenhagen 2009.

Point of views for the objectives and course range of basic education. The Finnish National Board of Education 2009.

Quality criteria for basic education. Ministry of Education 2009:19. (in Finnish only)

Regional Alteration in Education. Nyyssölä Kari, Jakku-Sihvonen Ritva. The Finnish National Board of Education 2009. (in Finnish only)

The evaluation plan for the years 2012 - 2015. Ministry of Education and Culture. (in Finnish only)

The Finnish Education System and PISA. Kupiainen Sirkku, Hautamäki Jarkko , Karjalainen Tommi. Ministry of Education 2009. (in Finnish only)

The organization of the education towards the 2020. The Finnish National Board of Education 2012:2. (in Finnish only)

http://www.minedu.fi / The Ministry of Education
http://www.oph.fi / The Finnish National Board of Education
http://www.edev.fi/ / The Educational Evaluation Council

Interviews:

Jari Lavonen, Professor of Physics and Chemistry Education Department of Applied Sciences of Education, University of Helsinki
Erja Vitikka, Senior Adviser, The Finnish National Board of Education
Elina Harjunen, University Lecturer in Didactics of First Language and Literature, Department of Teacher Education. University of Helsinki