

Governance structure and standard setting in educational assessment

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Abstract

Seldom have comparative studies of educational assessment systems been undertaken, let alone in relation to their standard setting procedures. This comparative study examines the effects of governance structures on the power relations in standard setting in the dominant school-leaving or university-entrance examination in various international contexts. We have undertaken a critical analysis of the published research and policy documents and conducted sense-checking with senior assessment practitioners from 22 jurisdictions. The nature of standard setting systems in three broadly representative cases of the Republic of Ireland, the United States of America and India is described in greater detail to showcase the differences between the following three models of governance systems: nationalised, commercial market and quasi-market. The contribution of this article, then, is to provide a nuanced description of the three models of governance systems, to classify the 22 jurisdictions using the three models, and to generate propositions inductively on how power is distributed with respect to examination standard setting under each distinctive system. Thus, the article provides a conceptual basis for extension of this work to other cases in order to advance the literature cumulatively by theory-building.

Introduction

School-leaving examinations, often used for universityⁱ entrance, have enormous effects upon individual life chances and upon the fortunes of teachers and schools through accountability mechanisms. Governments, international organisations, and other stakeholders are increasingly recognising the importance of assessment for monitoring and improving student learning and achievement levels, and the need therefore to develop strong systems for student assessment (Clark, 2012; IEG, 2006; Mourshed et al., 2007; UNESCO, 2007). An assessment system, according to the World Bank, is ‘a group of policies, structures, practices, and tools for generating and using information on student learning and achievement’ (Clark, 2012, p.6). Any national system involves complex social interactions of history, culture and educational policies and practices. For example, education has often been used as a tool for nation-building (Green, 1997) and assessment is a powerful policy lever in that agenda. This makes any comparative research between systems difficult and may partly explain the dearth of research in this area.

Where there have been comparative assessment studies, they have tended to involve the International Large-Scale Assessments (ILSAs) such as the Programme for

International Student Assessment (PISA) operated by the Organisation for Economic Cooperation and Development (OECD). Research on ILSAs was slow to take off and the field is highly contested (Hopfenbeck et al., 2018). However, these are not the assessments with the most powerful effects as they have no direct impact on student selection or individual school accountability.

From its inception, this journal has published a distinctive genre of research article in its Country Cases, documenting high-stakes assessments from every inhabited continent. However, there is very little *comparative* work on these cases – studies which look at the reasons for differences and draw theoretical conclusions that would help to explain, structure and predict assessment patterns. Because of their culturally specific nature, the results of these assessments cannot readily be used to compare outcomes across countries. However, if the object of study is assessment itself – how it operates and affects individuals, organisations and society – then ILSAs *and* national examinations can provide useful comparative data. This article focuses upon university-entrance examinations, particularly where they coincide with school-leaving examinations, some of the most high-stake assessments in virtually all systems. As will be seen later, even when comparisons are restricted to such assessments, there is diversity and complexity in categorising how they operate.

This work built upon a previous project on standard setting methods reported by Baird et al. (2018): *The Standard Setting Project*. In this project, over 20 jurisdictions were involved in documenting and comparing their standard setting methods. It did not directly address governance issues in examination systems. Our main interest, in keeping with the theme of this Special Issue on *Systemic influences on standard setting in national examinations*, is on how standard setting operates in different international contexts and the governance structure effects upon power relations in standard setting. Within the project Opposs & Gorgen (2018) distinguished three senses in which the term standard setting is used:

1. the content of syllabuses and examinations;
2. the demand of examination questions; or,
3. the levels of performance required to gain particular grades or scores.

In this article, we take a comprehensive view incorporating all three meanings of what standards mean to stakeholders and what governance includes. It is our contention that the assessment field has chosen to define standard setting narrowly in terms of the process of setting performance outcome standards after examinations have been set and marked. Whilst it is useful to distinguish conceptually between these different aspects of standard setting, there is an onus upon practitioners to take responsibility for all of these ways of viewing assessment standards in society. The World Bank's definition of an assessment system quoted above mentions the needs of stakeholders. As such, we take a broader view of standard setting that engages with the social, cultural, historical, political and structural contexts of the assessment system.

Our research questions were generated from one of the few relevant comparative texts available (Eckstein & Noah, 1993). In addressing the research questions, structural features in the governance of examination boards became a central theme because of the structural effects that the commissioning of examinations can have on the power relations and ownership of standards. Although these different forms of governance have been in plain sight, we cannot identify any research on their effects.

This article takes an inductive approach, working from the selected cases and their different forms of governance, to generate propositions concerning how these forms of governance

might affect the power dynamics in standard setting. By governance we mean the way in which the examinations are managed at the highest level: the systems for doing this, the social norms involved, and the power relations between formal institutions. The study establishes the following three governance models of examination systems: nationalised, commercial market, and quasi-market. The contribution of this article, then, is to describe the governance of assessment systems, to classify 22 jurisdictions using the three governance models and to generate propositions inductively, thereby advancing the literature cumulatively by theory-building. With 37 Country Cases published in this journal alone, the field is becoming more mature and is in need of better codification.

Conceptual framework

In a review of university admissions systems worldwide, a World Bank report produced a typology of university entrance examinations in a range of countries (Helms, 2008). However, the report acknowledged that the typology was limited by the variation within each country's system, the extent of centralisation within systems, and its failure to capture all models in use (Helms, 2008). The three types of examinations identified were secondary leaving examinations, entrance examinations and standardised aptitude tests. The third type is distinguished from the other two by its construct, measuring general cognitive abilities rather than attainment. Within each type, variations were outlined, some of which are hybrid models. For example, France is the first case cited as an illustration of a country using the national school leaving diploma, the *Baccalauréat*, for university entrance. However, selection for the prestigious *Grandes Écoles* involves both a high grade in the *Baccalauréat* as well as passing demanding entrance examinations set by separate institutions. The Helms typology provided a useful starting point, but it confounded governance with assessment content; we seek to focus upon governance matters.

Eckstein and Noah (1993) produced a classic comparative work on national examination systems, including cases in the United States, Sweden, the Soviet Union, England and Wales, China, Germany (former Federal Republic), France and Japan. It built upon previous publications and projects (see former projects described in Usill, 1938; Lauwerys & Scanlon, 1969; Lawn, 2008). Amongst their findings, they noted an international convergence of forms and practices of assessment, centralisation within countries and expansion of assessment provision to wider cohorts of test-takers. Crucially for the current project, they investigated who controlled the examinations and found that the formal 'ownership' varied between countries, with governments centrally controlling and owning the examinations in some contexts (e.g. France, China, Japan, Sweden), whereas in others there was regional ownership (e.g. Russia)ⁱⁱ or private ownership (the USA). The extent of centralisation and regionalisation varied, as some roles and authorities were delegated to regions and vice versa under different systems. Stability in the form of control was noted, with changes to how examinations were governed being the exception.

Another aspect of diversity is the role of teachers in the assessment system. Teachers variously had responsibilities for setting the syllabus, question papers, marking and standard setting in different systems. There are 'high trust' systems (see OECD, 2014) in which teachers are given a central role in assessing their own students (for example, Norway and Queensland) to the extent that upper secondary students' school-leaving certificates are predominantly based on their teachers' judgements. As the certificate is used for higher education entry, teacher judgements are considered high stakes in Norway (Tveit, 2014). In other systems, teachers are trusted as examination markers for students other than their own

(for example, England; the Republic of Ireland; West African Examinations Council) while their assessments of their own students do not contribute, or generally contribute minimally, to final grades in academic subjects. In 'low trust' systems, teachers are not involved in the external assessment processes. These assessments are likely to involve machine-marked multiple-choice testing, for example in Chile, South Korea and former Soviet Union countries such as Kazakhstan. These variations reflect the complex historical context in which the assessment system operates, for example the democratic ideals of Scandinavian countries, and the levels of corruption in the former Soviet Union examination system. Eckstein and Noah (1993, p.220) concluded that the role of teacher assessment had considerable implications for the teacher-student relationships and therefore for educational experiences. Additionally, trust in teachers and their professional status interacted with their role in the assessment system in complex ways. The causal directions between trust in teachers, their professional status and involvement in assessment are of course moot.

A wide array of qualifications and assessments is available in different countries, and there are international actors in these marketplaces. For the purposes of this article, we have narrowed the focus to the dominant system of high-stakes school-leaving examinations which are also sometimes university-entrance examinations. These may not always be the same assessments in every setting, which brings complexity. Additionally, schools (e.g. in England) may have a choice about which assessments to take for university entrance and in Sweden, individuals may take an additional test if they want to try to improve their chances of being admitted to higher education. It would also seem that different rules apply to private schools compared to state schools in many countries – with state schools being under more government control and often having less choice. In most countries, the Ministry decides upon the curriculum content, while examination boards provide the assessments. However, there are international actors offering examinations or qualifications, such as Cambridge Assessment International Education, the International Baccalaureate Organisation and the West African Examinations Council. Whichever approach is taken, articulation with the requirements of university entrance is key, making universities an important stakeholder for the assessments upon which we focus. Further, for all of these complexities, there is a well understood 'system' that dominates the lives of school children in most countries around the world. In many cases, the system may be subnational (e.g. Australia, Canada and UK) rather than national. This is an interesting facet of where the power lies in standard setting. We aim to describe the mainstream experience in each of the cases discussed, whilst recognising the diversity in each situation.

The overarching research question of this study is 'How are assessment systems governed and how does this relate to power issues in the dominant assessments of high-stakes school-leaving examinations internationally?' As a result of our analyses, we developed a series of sub-questions which were used to interrogate a particular national or state assessment system. These allowed a measure of comparison on specific elements within the system without having to constrain them within a framework which was unlikely to fit:

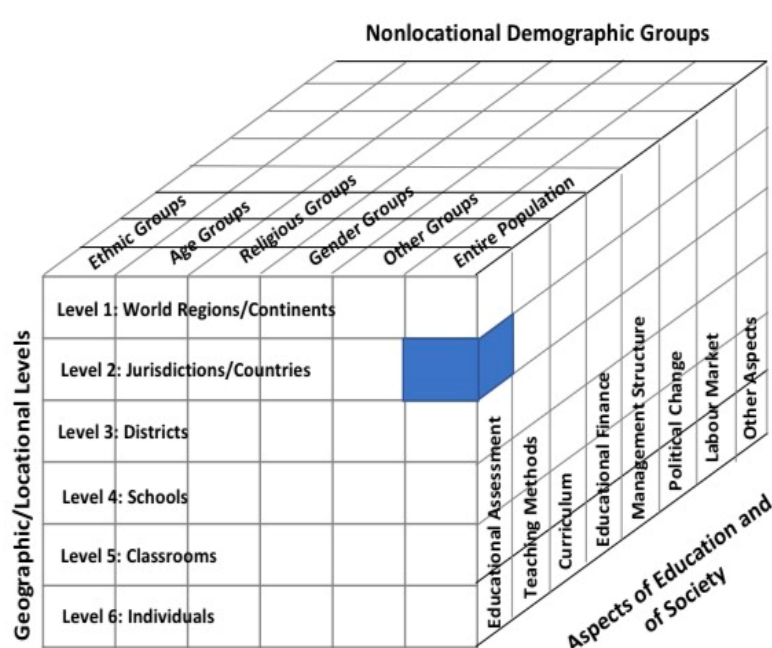
1. How are examinations commissioned and funded?
2. How are standards set?
3. Who are the powerful stakeholders who influence assessment standards?

We anticipate these questions may be refined and augmented as other case studies of different jurisdictions and systems emerge in future work.

Method

This comparative study adopted a holistic, multiple-case design to examine the governance structure effects on the power relations in standard setting for dominant practices of educational assessment. The holistic design was chosen because of a single unit of analysis (Yin, 2009) which in this case is a jurisdiction. The highlighted squares on the comparative cube (see Figure 1) situate our unit of analysis (jurisdiction), our main aspect of education (educational assessment), and the demographic focus (entire population) in the broader context of comparative education research. When it comes to the study of educational assessment, comparative education research has revolved around various aspects of international large-scale assessments. Our analytical focus on the dominant national systems of school leaving/university entrance examinations is unique in the field.

Figure 1 The comparative cube (adapted from Bray and Thomas, 1995)



This study included the analysis of published research and policy documents on 22 jurisdictions to gain an understanding of how the governance effects unfold in different contexts. The jurisdictions were selected based on the research team's familiarity with the selected contexts. Following the analysis, we established three categories of examination systems: nationalised, commercial market, and quasi-market. We have undertaken a sense-checking exercise with practitioners from all 22 jurisdictions. The sense-checking involved asking senior practitioners for their feedback on the draft article in general and the dominant assessment system in their country contexts in particular. They were also asked to comment on whether the categorisation of the governance of the examination system was correct. Appendix A includes the details on the dominant examination systems in the selected 22 jurisdictions and suggests how other countries' examination systems may be classified; these have been confirmed through the sense-checking exercise.

We selected three jurisdictions – the Republic of Ireland (henceforth referred to as Ireland), the USA and India – for a nuanced illustration of each governance category of examination systems. These three country systems represent average cases for each governance category and they all, to differing extents, use high-stakes university-entrance examinations as a determinant of university entry, while offering a significant variation in the models of governance, which we explain in more detail after outlining the cases. Table 1 presents a snapshot of the core contextual characteristics of the three systems, showing the diversity of the countries.

Table 1. Core contextual characteristics of the three systems

	Ireland	USA	India
Population (2019)	4,882,495	329,064,917	1,366,417,754
GDP per capita (current USD) (2018)	78,806	62,795	2,010
Poverty headcount ratio at \$1.90 / day (2011-2017)	0.2%	1.2%	21.2%
Gross enrolment ratio, tertiary (2017-2018)	77.78%	88.17%	28.06%
Percentage enrolment in upper secondary education in private institutions (2016- 2017)	0.60%	9.00%	59.18%
Percentage enrolment in tertiary education in private institutions (2017-2018)	3.63%	26.45%	57.62%

Note: own calculations based on UN data (2018, 2019), UNESCO (2017, 2018a, 2018b), World Bank (2018)

India is under-represented in the assessment literature, despite its population size and the emphasis given to educational assessment outcomes in that context. It also differs from the other two cases with respect to poverty, the high proportion of secondary school students in private schools, and the large number of examination boards within the country. Ireland was chosen as a typical case, representing a large number of countries. In these countries, all students in their final year at a government-funded secondary school sit the examinations provided by one central organisation, established by the nation for that purpose. The USA is quite different from India and Ireland and unusual globally in that there is no national school-leaving examination. There are, though, different assessments for school-leavers, provided by a few private organisations within the country. Students have the option of paying to take these examinations, using the results when applying to universities. The USA has provided an influential assessment model through its development of standardised multiple-choice testing techniques, as opposed to examiner-marked more open-ended examinations. The USA also

represents more complex ‘hybrid’ models of college selection which draw on a range of measures, including teacher assessments and the students’ own statements and activities. There is relatively little control or influence from central (federal) government. Next, we describe standard setting in each of these cases, before turning to the governance models.

Standard setting in Ireland

In Ireland, over 90% of young people spend their last two years at school taking the Leaving Certificate programme, mainly taking the examinations at age 18 years. Examinations in each subject are offered at two levels – Higher and Ordinary. In addition to its primary purpose of certifying achievement on exit from second-level schooling, the Leaving Certificate also serves as one key selection mechanism for entry to higher education.

Although part of the UK until 1922, Ireland had its own arrangements for education. From the late nineteenth century, there had been an education board for Ireland that ran public examinations, partly as a way to determine funding levels for individual schools. The arrangements for the Leaving Certificate date from 1924 and represent an evolution from the previous provisions. The examinations were originally run directly by a ministry - the Department of Education and Skills - until the government established the State Examinations Commission (SEC) in 2003. The SEC is a non-departmental public body under the aegis of the Department of Education and Skills. It is staffed by civil servants and overseen by a Board comprising five Commissioners appointed by the minister through an open process.

The Leaving Certificate examination is firmly situated in the curriculum-based assessment paradigm, using attainment referencing as a standard setting approach. Attainment referencing is used by a number of examination boards as a definition of standards (Baird et al., 2018) and involves judgments of students’ overall level of attainment in the curriculum being examined (Newton, 2011, p.20). Both qualitative and statistical information are used in the process. The SEC is responsible for the development, assessment, accreditation and certification of the Leaving Certificate. It does not, though, develop the syllabuses for the Leaving Certificate. The role of the National Council for Curriculum and Assessment (NCCA), another statutory body, is to lead developments in curriculum and assessment and to support the implementation of changes resulting from this work. That includes drawing up the curricular programme and individual subject syllabuses for the Leaving Certificate programme, usually through an extensive consultative process, following which the minister approves syllabuses for implementation.

The SEC runs the entire examination process, working in partnership with school authorities and education providers. When developing a new syllabus, the NCCA produces sample assessment items to make sure that the content of the curriculum is clear. The SEC produces sample examination papers for schools, aiming to ensure that the NCCA’s curriculum intentions are realised in those papers and in the live papers that it produces subsequently. The SEC has full responsibility for the production of live examination papers, the arrangements by which those papers are sat in schools, marking of papers and of coursework, standard setting, issuing results, and dealing with appeals about those results.

Other than in a small number of vocational subjects, all coursework is externally assessed, rather than being assessed by the candidate’s teacher. That is because most secondary teachers see their role as teaching and supporting their students rather than assessing them.

Although the Leaving Certificate examinations are ultimately the responsibility of the Minister for Education and Skills, the SEC acts on the minister's behalf and is left by the Department to run the day-to-day examination operations as it determines. Policy matters, though, remain with the Department. So, for example, exam entry fees for the examinations are set by the minister. Fees are paid by students, or by their parents or guardians, unless their family is considered financially disadvantaged, in which case the state covers the costs.

Another interesting policy issue is that until 2016, the relationship between grades awarded at Higher level and those awarded at Ordinary level was constructed by higher education users of the results. There was no obligation on the SEC to ensure that examining standards at the two levels reflected this linkage. However, in a significant policy change in 2015, the Department directed that examining and grading standards should in future be aligned. The SEC is currently preparing proposals for consideration by the Department of Education and Skills as to how best to ensure that the stated alignment becomes a reality, underpinned by as robust a linking procedure as is feasible.

Each summer, the SEC Board signs off the national results before they are issued. The Minister will be briefed on the results a day or two before they are released, but not with a view to making any changes to them. This type of structure – where national examinations are run by an arms-length body set up by a government's education ministry – was commonly used amongst the 20 standard setting systems considered as part of the Standard Setting Project (Baird et al., 2018).

Standard setting in the United States of America

The United States of America (USA) provides a complex 'hybrid' model of standard setting and selection. The forms of tertiary education are varied, and the routes to, and through, them are highly permeable. While it is estimated that there will be some 23 million students in college in 2020, their routes to college will vary considerably and will be locally determined. This offers the possibility of college education being available at some level for most of the cohort graduating from high school.

This pattern of local decision making reflects the origins of education in the USA with its emphasis on local structures and lack of any direct central control. Where there has been direct federal intervention, this has been largely in terms of funding-linked legislation. Federally guaranteed student loans are an example of this type of intervention at the post-secondary level. Litigation which reaches federal levels of appeal, for example on de-segregation, has also shaped state and local policy.

The USA can best be treated as a state level, subnational, system which includes some alignments between states, for example the jointly developed Common Core Standards which have been developed by the states through the National Governors Association and Council of Chief State School Officers. The Standards are intended to lead to common definitions of college and career readiness.

The SAT and ACTⁱⁱⁱ are standardised tests used in selection. They are not directly commissioned by central or state government. They are generated by college entrance requirements and privately developed and administered by agencies which have historically pioneered psychometric test development processes. However, the use of the results of these tests is far from uniform, with many institutions claiming they do not set a cut score for applicants. Standard setting is now a fairly limited part of the tertiary selection process,

which generally relies more on school performance (Grade Point Average, class ranking and teacher recommendation) and other factors evidenced in interviews and applications. These standardised tests used in selection are not directly commissioned by central or state government. The market for them is generated by college entrance requirements and privately developed and administered by agencies which have historically pioneered psychometric test development processes.

Tertiary education providers are the most important stakeholders in these processes, with each college determining which selection criteria are used and how. Given this variability, attracting and selecting students has become a major college activity for less selective institutions, often resulting in large admission departments, especially as surplus places mean many institutions are recruiting rather than selecting students. The Ivy League schools recruit primarily to increase diversity and to advantage their sports performances. The weightings of these different elements vary by college, with some placing weight on the standardised tests, while others may largely ignore them. There is a substantial industry preparing students for college, both in terms of test preparation and application guidance.

Selection qualifications vary by type and status of the college. For some, high school graduation may be sufficient, particularly in relation to two-year Community College courses, where it is then possible to complete the equivalent of the first or second year of university and transfer on that basis. It is estimated that a third of students will change universities during their undergraduate careers (US Department of Education, 2017) and only 58% complete their bachelor's degree (Dunlop Velez, 2014). Universities are likely to require a range of information including a school-based Grade Point Average, class rank and high school difficulty (these may be turned into an algorithm and weighted). There may also be a teacher letter of recommendation and the student's own 'personal statement'. These accompany the results of standardised tests – the SAT/Advanced Placement Tests or the ACT which are taken in roughly equal numbers (around 1.6 million each).

The forms of assessment used in college selection are therefore varied and flexible. The strength of this is the validity that comes from the multiple sources of evidence that are brought together in selection for college entrance. This 'hybrid' system reflects the centrality of local and state level control, with limited central (federal) direction. The stability of the system stems from being both well established – the public are familiar with the system – and flexible. As demographics change, selection mechanisms can adjust. A surplus of provision may be met by, for example, downplaying cut scores on SATs and ACTs, or even ignoring test results, and looking at school and individual student data.

Standard setting in India

India is a huge country with a population of over 1.3 billion. Education policy since independence in 1947 has been influenced fundamentally by the Kothari Commission (Government of India, 1966) and then by the National Policy on Education (1986). The Commission Report recommended an external examination at the end of 10 years of schooling to be followed for some students by another two years of general education and another examination. The latter policy included that examinations should provide a 'valid and reliable measure of student development and a powerful instrument for improving teaching and learning'. However, the nature of examinations themselves has remained fundamentally unchanged since the British era when they served the specific purpose of identifying young people who could memorise given facts, a skill that was considered useful for colonial administration. Beyond those published policies, the Indian government's role involves

leaving examination boards to write syllabuses and run school-leaving examinations as they see fit, within the boundaries of the overall national curricular framework.

Just over half of Indian pupils now stay at school until the age of 18 years when they sit a school-leaving examination, the main purpose of which is certifying achievement at the end of this stage of education, but the results may be used for admission to university. About two thirds of secondary students are in private sector schools; one third are in public sector schools.

Schools may be affiliated to a national exam board or a state-level exam board. Private sector schools are free to decide which one of the school-leaving examinations they use but state government schools are usually automatically affiliated to the relevant state board. The examinations are provided externally, taken under secure conditions and marked by selected teachers, usually based on their experience and availability. The markers do not receive any particular training, other than a common briefing before the process, and the board-prescribed assessment rubrics. Fees for the school-leaving examinations are almost invariably paid by students, or by their parents or guardians.

The two largest national examination boards are the Council for the Indian School Certificate Examinations (CISCE) and the Central Board of Secondary Education (CBSE). Both offer examinations at the end of secondary school (grade 10) and senior secondary (grade 12). CISCE is a not-for-profit board, set up in 1956, mainly by representatives of Christian missionary schools, as an Indian Council to administer the University of Cambridge's examinations in India. Since 1958 it has instead provided the Indian School Certificate (ISC) in which English is the medium of instruction. The award of a Pass Certificate in the ISC requires a pass in four or more subjects, including English, at one sitting. CISCE is the only Indian examination board that is financially independent.

The CBSE was reconstituted by the central government in 1962. A main objective was to support students whose parents were employed in the central government and had jobs that were frequently transferred. The CBSE offers the All India Senior School Certificate Examination (SSC) which is written in English or Hindi. Centrally-administered schools such as Kendriya Vidyalaya and the Indian Army Public Schools usually take CBSE examinations. The SSC involves assessments in two languages and three other subjects as chosen by the student. Students must pass each subject to gain their full qualification. CBSE also provides examinations for admission to undergraduate courses in medicine in numerous colleges.

Additionally, there are 52 state government boards, the oldest of which is the U.P. Board of High School & Intermediate Education, founded in 1922. A portion of each board's curriculum focuses specifically on imparting knowledge about the state and the examinations are usually written in the state language. Most of these boards are closely supervised by a senior civil servant working for the state government who signs off all major decisions.

The pass standard for each examination is determined by the responsible board; there is no national agreement on this. Similarly, there is no national grading system. For example, in the SSC, externally assessed subjects are given numerical scores, with a pass mark of between 33% and 35%. There are eight pass grades. These are cohort-referenced and run from A1 to D2. In a cohort-referenced approach, the same or very similar proportions of test-takers are awarded the grades in different examination series. In the ISC, all subjects have 80% external assessment, the pass mark is 40% and the award is indicated by grades 1 to 8. Although this

system also has eight grades, each grade relates to a pre-determined mark range, so is not cohort-referenced. There is no uniformity in the case of the state boards, which follow several different systems, but the most common scale used has three pass grades. However, the Council of Boards of School Education (COBSE) does try to bring about some alignment in pass marks.

The ISCE and the CBSE both make some use of school-based assessment, the scores from which contribute towards the final grade awarded. However, a significant number of teachers lack assessment skills and school-based assessment is seen to lack transparency and be open to malpractice. More widely there are concerns in India about examination malpractice including outright mass copying, leaks of question papers and collusion by officials of state boards. Other political issues raised recently about these examinations concern trends in pass rates over time (particularly where they are declining), and revisions to the curriculum, especially concerning history, as well as the general decline in analytical skills expected at secondary level due to an excessive emphasis on memorisation of facts and information as opposed to cognition and analysis.

In recent years, the CBSE has emerged as the *de facto* determinant of national benchmark standards. Many state boards such as Kerala, Punjab and Jharkhand have adopted the CBSE curriculum along with textbooks published by NCERT (National Council of Educational Research and Training), thus applying the same standards at state level, while competitive examinations for entrance to medical courses at undergraduate level are generally based on the competency levels expected by the CBSE.

Governance of educational assessments

The use of examination results to assign life chances on the basis of merit has a very old history, going back to Imperial Examinations, which were used for entry to the civil service in China for at least a millennia (e.g. Roberts, 2006, p.31). In that historic examination, access to civil service careers was distributed to the select few on the basis of their examination scores, rather than by nepotism. The examination was necessary to justify a change in the social order and to undermine the power of the aristocracy. These days, many argue that assessments serve to reinforce current social hierarchies by providing a mechanism to justify selection that is highly connected with existing social stratification. As such, questions arise regarding who has the power to decide the content and processes of setting standards for national examinations. We note that there are different forms of governance of educational standards, which affect the power and perceived legitimacy of different actors in relation to standard setting. As we have demonstrated, the governance of school-leaving examinations or university entrance tests can be different to a state-operated, nationalised system, even if this is what is generally assumed to be the only model. Indeed, some school-leaving examinations are available in a market, while in other countries quasi-markets are in operation. Below we outline the key features of each system of governance.

Nationalised system

The Ireland case outlined earlier is an example of a nationalised governance system. In a nationalised system, the state is both the funder and the provider of a service. A key historical driver in many systems was to contribute to 'state formation' (Green, 1997), part of developing a national identity through common educational processes. For example, this was at work in centralised Prussian and French systems of the pre-20th century. State-run school-leaving examination or university-entrance systems are common in many settings (e.g.

Azerbaijan, France, Ireland, Kazakhstan, Malaysia, Nigeria, Norway, Russia, Scotland, Sudan and Sweden.

In some cases of nationalised systems, high-stakes university-entrance examinations are the sole determinant of admission to higher education (e.g. Azerbaijan, Georgia, Kazakhstan, South Korea). Irrespective of whether this is the case, the benefits of nationalisation may include a centrally-planned, coordinated approach that can be helpful to individuals and institutions in society. There can be economies of scale and system failure can be rectified more easily, should it occur. Disadvantages of nationalised systems can include lack of choice; there can be inefficiency or poor service and a lack of innovation due to weak incentives to improve. In cases where centralised examinations are the sole criterion for university entry (e.g. most former Soviet countries), the nationalised system of university admissions can increase the transparency, reduce corruption by removing local control of decisions about admissions, and allegedly enhance equity (DeYoung et al., 2018; Ruziev & Burkhanov, 2018; Smolentseva et al., 2018). The existing evidence on former Soviet countries shows that while the corruption was eradicated in some settings (Chankseliani, 2014; World Bank, 2012), equal treatment of all applicants did not translate into equitable outcomes (Chankseliani, 2013a, 2013b).

In a nationalised system, the public purse usually funds the examinations. Monies may be supplied directly to the institution responsible for the examinations in the form of a grant. Typically, there are policy deliverables attached to the finances. Typically, there are no customers, as such. The senior executives and board members are likely to be appointed by government and their careers are likely to depend directly upon the government's satisfaction with the operation of the institution and its examinations. For example, Azerbaijan's State Examination Centre, Georgia's National Assessment and Examinations Centre and Uzbekistan's State Test Centre are under national government control. Some of these bodies report to their Ministry of Education (e.g. in Georgia) while others report directly to the President (e.g. in Azerbaijan), or the cabinet of Ministers (e.g. in Uzbekistan). Such nationalised institutions may be well respected for their expertise, especially as there are no or few competitors. However, these institutions are under government control and therefore have only soft power to direct their own agenda or confront government policy. In some countries, the stability of government (e.g. in Azerbaijan, China, Kazakhstan, Singapore, Russia) or cross-party consensus (e.g. in Scotland) permits long-term strategy for a nationalised examination system. However, in other countries, party politics may mean that the examinations could be set to change with each change in government. Regulation and regulatory bodies are present in some nationalised systems. This enables governments to claim a distance from the examinations and standards (McCaig, 2003), though the regulation may be conducted from within the same organisation as the examination body (e.g. Scotland).

In the context of centralised examinations for higher education admissions, the political power lies with the government that fully controls, administers and funds the examinations, and makes all decisions on how examinations are conducted. Unified examinations for higher education admissions in former Soviet countries are presently funded and administered by respective governments.

In nationalised systems such as Ireland, the school-leaving examinations are typically the responsibility of a government minister. The government here may refer to the whole nation (e.g. France) or to jurisdictions within it (e.g. Australian states, Canadian provinces, and

Hong Kong as a Special Administrative Region of China). Although the government is likely to have a major role in determining the broad shape of the examinations and the curriculum they assess, the examination board may well run its routine operations as it sees fit with little or no government intervention, even when examination results are being determined. Of course, the government still has power and influence as it probably provides the funding to run the examinations and may appoint the governing body and senior members of staff. It is also likely to be seen by the public as being responsible for the actions of the examination board.

Commercial market

The USA case outlined earlier is an example of a commercial market governance system. Various suppliers may operate in a commercial system, such as for-profit, not-for-profit, governmental organisations and so on. In a market-based system, the government is neither the funder nor the provider of services. A market operates on supply and demand, which affects pricing. Customers may be individuals or schools, who purchase the product because it can be used to improve the test-taker's life chances, and sometimes the reputation of the school can be affected by the test results. There are different forms of market, from perfect competition with unlimited producers and consumers to monopoly, in which there is a single provider. An oligopoly is not unusual, in which a small number of companies together control the majority of the market. Benefits of a commercial market system include choice for the consumer and may, depending upon the form of market, include efficiency and innovation due to competition. The barrier to entry to high-stakes examination markets can be high and reputation is a key product differentiator. New examinations can take a long time to become established under any system. As discussed earlier, commercial markets for examinations and tests exist in most countries for vocational assessments such as IT qualifications, for English language tests and for international qualifications (such as those offered by the International Baccalaureate), amongst other things. However, they are also in operation for school-leaving examinations in some settings. Government control of examination bodies is through the power they have over reputation. In a commercial market system, the government may have little political liability for individual examination providers.

In commercialised systems, such as that in the USA, the individual examination boards are largely or wholly free from any government control. The examination boards are likely to be free to set their standards entirely as they see fit; the government is able to claim no responsibility for what the boards do. However, universities are a more powerful stakeholder in this system because they construct the market for the tests. Vested, commercial interests in a commercialised system mean that high barriers to entry into the market may need to be constructed by the industry itself. The technical, assessment expertise in examination boards in the USA sets a high barrier for new entrants to the market. The psychometric expertise underpinning standard setting in the USA has frequently been accused of lacking transparency. Likewise, expensive technology as standard would preclude small companies from entering the market and we have seen large technological advances in the infrastructure of examinations from the USA examining bodies which have subsequently been taken up elsewhere (such as on-screen marking).

Commercialised systems also operate for private and international schools in most countries across the globe. These schools can choose to take examinations such as those offered by the International Baccalaureate, or Pearson or Cambridge International A-levels. Operating

across countries, these examination boards are free to set their own standards, uncontrolled by any governments.

Quasi-market

India and England are examples of quasi-market systems. In a quasi-market, the state outsources the supply of services, purchasing them from a range of providers who act in competition with each other (Le Grand, 1991). Instead of the bureaucratic allocation of funding in a nationalised system, funding is allocated through tendering and contracting or by giving individuals or institutions vouchers to spend with providers. Often the customer or end-user is not the decision-making agent with purchasing power in a quasi-market. Schools often take the decisions regarding examinations rather than the test-takers themselves. The advantages of a quasi-market may be more choice and better accountability than in a nationalised system. There may be less bureaucracy and more agility due to less centralised control. Competition may drive up service standards across the sector. Failure of providers is also an advantage, as it weeds out the poor performers. Regulation is an essential feature in a quasi-market system, to ensure that the intended objectives are the focus of competition, rather than gaming of the system. As such, grade inflation is a potential problem in an examination quasi-market. Of course, there are costs involved in setting up and running a quasi-market infrastructure, including its regulation. Further, choice may not be the main factor prioritised by the public. Instead, the public may prefer a standard, high-quality approach across all provision (Exley, 2014). In a quasi-market, the government has contractual power over examination boards, which can extend to standard setting. Regulation of standard setting is essential to avoid competition through lowered standards to sell examination outcomes at an easier cost of effort to the consumer.

In India's examination system, state schools are affiliated to their regional examination board but private schools have a choice of board. Most upper secondary school children attend private schools. Therefore, the prevalent system in India is a quasi-market model, in which private schools typically select from one of the Indian examination boards.

Pakistan also has regional examination boards that provide its Higher Secondary School Certificate for the colleges educating grades 11 and 12 students. As in India, government colleges have to be affiliated with their respective regional examination board but private colleges have some choice. As most students in Pakistan attend government colleges rather than private colleges, that country's dominant system is a nationalised one.

In quasi-market systems, the government has a great deal of power, as it ultimately holds the purse strings through regulation or on a contractual basis. Customers also have power, though their interests might compete directly with government policy in relation to standards. In England, the 2010 government alleged that examination boards had dumbed down standards to improve their market positions (Hansard, 7 February 2013 col 441) although the regulator had recently changed its approach to standard setting with a 'comparable outcomes' methodology being used to address directly comparability between the examining boards (Taylor & Opposs, 2018). Another effect of the comparable outcomes approach was to maintain examination outcomes at an approximately consistent level across years. Schools, the customers of the examination boards, have complained about the lack of recognition of educational improvement in this system. Currently, it is evident that the government has more power over standard setting methods than the customers in this quasi-market system.

Discussion and conclusions

Synthesising how dominant school-based university selection examinations function defies simple definition, and the more countries we included, the more complex the task became. Terms that describe the operation of assessments unproblematically across cases are difficult to coin and therefore long clauses have been used as inelegant compromises. Indeed the diversity of ways of operating assessment systems is astounding. Additionally, conceptualisation of what counts as an assessment system is a topic for some serious further work. International examinations, vocational qualifications, language tests and so on may or may not be viewed as part of the system, but a principled way of defining ‘the system’ is lacking, to advance the definition proposed by the World Bank quoted in the introduction above (Clark, 2012). This article is limited by not having solved these issues.

Previous approaches to classifying educational assessment systems have confounded governance with assessment content by focussing on functional matters, such as assessment formats or other aspects of assessment technology. Further, there has been a failure to take into account the historical context of the systems. Geographical extent of systems has been an additional muddling factor. Parallel choice and the dominance of particular assessment systems have not been handled well in the typologies. Here, we have set out three forms of governance and related them to power issues in standard setting practices.

Examinations are commissioned and funded by governments in nationalised systems. In commercial markets, the government sanctions, albeit not necessarily explicitly, the examinations, but it is the user of the test scores (universities) which gives the examinations credibility. In quasi-markets, governments commission the examinations but funding arrangements vary and are not always from the public purse.

Influential stakeholders in standard setting are governments, universities, examination boards, regulators and the teaching workforce. In nationalised systems, governments hold the ring and may be the dominant stakeholder, though they may delegate this power to universities or other professional bodies or civil service organisations. Due to contracting power, governments are also the dominant stakeholder in quasi-market systems, though examination boards and other providers are vocal lobbyists. In the only commercial government system case that we have identified, the USA, examination boards and universities have a great deal of power over assessment standards. In any system where private providers are suppliers, there is the prospect of decisions regarding attainment standards being decided by stakeholders with profit motives, who may know little about school contexts or young people’s learning.

Our analysis has led us to the following propositions, which can be tested in future research.

- A. Most assessment governance systems are nationalised.
- B. Rarely do governance structures change within a country. Stability is the norm.
- C. Globally, there has been very little convergence in assessment governance systems, unlike other aspects of education system organisation and governance. Despite colonial influences and Americanisation, very few examples of quasi-market or commercial market systems exist.
- D. Most, perhaps all, countries have parallel assessments for private schools, language assessment, vocational educational needs and so on. These may have separate governance arrangements.

We have found few previous analyses of the merits of different governance systems in relation to examinations, and those which are available argue for an approach from particular commercial or economic perspectives (e.g. Sahlgren, 2016). Addressing the economic arguments is a fruitful area for further research. A highly cited source on the question of nationalisation or privatisation of goods and services claimed that ‘economists generally failed to anticipate the grotesque failure’ of state ownership (Shleifer, 1998, p.135) and set out a narrow set of circumstances under which government ownership would operate better than privatisation:

1) opportunities for cost reductions that lead to non-contractible deterioration of quality are significant; 2) innovation is relatively unimportant; 3) competition is weak and consumer choice is ineffective; and 4) reputational mechanisms are also weak.
(Shleifer, 1998, p.140)

Governments have the power to decide the governance structures for dominant assessment systems in all three governance structures, though as noted above, this can be difficult to change once established. An example in which the government raised the possibility of changing governance structure is England. Questions regarding whether England should have a quasi-market system or a nationalised system have arisen under governments to the left and right of the political spectrum (Tattersall, 2007, p.78).^{1,2} Largely based upon Shleifer’s four criteria, Sahlgren (2016) argued that there were few reasons to support government provision of the examination system in England. His analysis failed to account for the general adoption of nationalised examinations internationally. Further, nationalised systems are favoured not only by left-wing governments. Conservative governments in England (to the right of the political spectrum) have discussed the prospects of a single examination board a number of times, but has not yet changed the governance structure (at least for school-leaving examinations).^{3,4} Additionally, examination governance has not been moved to a commercial model with changes of government to the right in other countries. It follows that there are benefits to a nationalised examination system that override general beliefs regarding the superiority of market provision of examinations compared with public sector provision. Such benefits must be distinctive from other sectors, since there has been a shift to privatisation across a range of sectors (e.g. energy, transport, telecommunications) in many countries since the 1980s, but a comparable shift in examination governance is not to be found, as yet. This leads to our fifth and final proposition.

E. The role of examinations in justifying allocation of resources such as university places and labour market returns, in selection systems, makes them a suitable case for national, state provision in many countries.

The selective function of examinations and its link with political and social justification of resource allocation is highly unlikely to be the only reason for the pattern of national governance systems that we find, but it is an important one. This may help to explain why so few countries have introduced a commercial governance system.

¹ <https://www.theguardian.com/education/2015/aug/09/exam-boards-students-a-level-results-nick-gibb-reform>

² <https://www.theguardian.com/education/2013/feb/07/gove-gcse-reforms-from-2015>

³ <https://schoolsweek.co.uk/hinds-im-happy-with-system-of-multiple-exam-boards/>

⁴ <https://feweek.co.uk/2018/07/02/if-a-levels-need-multiple-exam-boards-why-dont-t-levels/>

As this is the first study of its kind, future research is needed to identify whether the propositions regarding standard setting suggested by our analysis apply more widely to other examination systems. The intention is that the current study forms a basis for extending this work to further cases to generate new theoretical, explanatory insights for the differences between national systems.

Endnotes

ⁱ In this paper, the term university is used interchangeably with higher education institution and tertiary education is used interchangeably with higher education.

ⁱⁱ Russia has arguably become more centralised since these reviews were undertaken.

ⁱⁱⁱ The SAT (formerly the Scholastic Aptitude Test, now an ‘empty’ acronym) and ACT (originally American College Testing) tests are alternative selection tests that are themselves not closely aligned. Both the SATs and ACTs use familiar psychometric and judgmental methods to put scores on a common scale in order to provide comparable year on year and test form to test form comparisons. Scores on the SAT range from 400 to 1600, combining test results from two 800-point sections: mathematics, and critical reading and writing. Both the points and the sections have seen changes over time, for example there has been a conscious attempt to align the tests more closely with typical school curricula.

The SAT tests are multiple choice with the exception of some of the mathematics questions and an optional essay section. The raw scores are converted to scaled scores so the precise conversion chart varies between test forms. ACT scores for the four tests (English, mathematics, reading, science) are presented on a standardised scale of 1-36, with 36 being the highest. The composite score is the average of a candidate’s test scores, rounded to the nearest whole number. SATs were more popular in the East and West, and ACT more popular in the South and Midwest. This is not the case now, as most institutions accept either test and many students take both.

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Appendix A. Classification of dominant assessment systems

Jurisdiction	Examination(s)	Governance system	Administrating organisation(s)	Website
Azerbaijan	Gabul or üzrə qəbul imtahanı (higher education admission examination)	Nationalised	State Examination Center	http://www.tqdk.gov.az/en/
Chile	Prueba de Selección Universitaria (PSU) (University Admission Test)	Nationalised	Department for Educational Assessment, Measurement and Registry (DEMRE), University of Chile	https://www.demre.cl
China	高考; gāokǎo (The National College Entrance Examination)	Nationalised	The Ministry of Education (national level) authorises 省级教育考试院 (the Education Examinations Authority at provincial level) to administer gāokǎo at the provincial level	http://gaokao.nec.edu.cn/ https://gaokao.chsi.com.cn/
England	A level	Quasi-market	1. AQA 2. Pearson Edexcel 3. OCR 4. WJEC	1. https://www.aqa.org.uk/ 2. https://qualifications.pearson.com/en/home.html 3. https://www.ocr.org.uk/ 4. https://www.wjec.co.uk/
France	Baccalauréat	Nationalised	French Ministry of Education	https://www.education.gouv.fr/
Georgia	ერთიანი ეროვნული გამოცდები (unified national examinations)	Nationalised	National Assessment & Examinations Center	https://geonaec.com/
India	1. Indian School Certificate (ISC)	Quasi-market	1. Council for the Indian School	1. https://cisce.org/ 2. http://www.cbse.nic.in/

Jurisdiction	Examination(s)	Governance system	Administrating organisation(s)	Website
	2. India Senior School Certificate Examination (SSC)		Certificate Examinations (CISCE) 2. Central Board of Secondary Education (CBSE)	
Ireland	School Leaving Certificate	Nationalised	State Examinations Commission	https://www.examinations.ie
Japan	nyūgaku shiken (entrance examination)	Nationalised	National Centre for University Entrance Examinations (NCUEE)	https://www.dnc.ac.jp
Kazakhstan	Единое национальное тестирование / Ұлттық бірыңғай тестілеу (the unified national test)	Nationalised	National Testing Center	https://www.testcenter.kz/en/
Malaysia	1. Sijil Tinggi Persekolahan Malaysia (STPM) (Form 6 Malaysian Higher School Certificate) 2. Matriculation	Nationalised	1. Malaysian Examinations Council 2. Government-administered Matriculation Colleges	1. http://portal.mpm.edu.my/en/home 2. https://www.moe.gov.my/index.php/en/pre-university
Nigeria	1. West African Senior School Certificate 2. Senior School Certificate	Nationalised	1. West African Examinations Council 2. National Examinations Council	1. http://www.waecnigeria.org 2. https://www.mynecoexams.com
Norway	Upper secondary education examinations that contribute to the secondary school certificate	Nationalised	The Norwegian Directorate for Education and Training	https://www.udir.no/in-english/

Jurisdiction	Examination(s)	Governance system	Administrating organisation(s)	Website
Pakistan	National Aptitude Test (NAT – I & II)	Nationalised	National Testing Service	https://www.nts.org.pk/
Russia	Единый государственный экзамен (unified state examination)	Nationalised	Federal Service for Education and Science Administration	http://www.ege.edu.ru/ru/ (the examinations web-site) http://www.obrnadzor.gov.ru/ru/ (the web-site of the Federal Service)
Scotland	Higher	Nationalised	Scottish Qualifications Authority (SQA)	https://www.sqa.org.uk
Singapore	A level	Nationalised	Singapore Examinations and Assessment Board (SEAB)	https://www.seab.gov.sg
South Korea	College Scholastic Ability Test (CSAT)	Nationalised	Korea Institute for Curriculum and Evaluation (KICE)	http://www.kice.re.kr/main.do?s=english
Sweden	Högskoleprovet (Swedish scholastic aptitude test)	Nationalised	Swedish Council for Higher Education	https://www.uhr.se/en/start/
Sudan	Sudan Secondary School Certificate	Nationalised	Ministry of Education	www.moe.gov.sd
USA	1. SAT 2. ACT 3. Advanced Placement (AP)	Commercial market	1. College Board; ETS 2. ACT, Inc. 3. ETS	1. https://www.collegeboard.org/ https://www.ets.org/ 2. https://www.act.org/ 3. https://www.ets.org/
Uzbekistan	олий таълим муассасаларига қабул қилиш учун кириш тест синовлари (multiple choice exams for entrance into higher education institutions)	Nationalised	Uzbekistan State Test Centre	https://www.dtm.uz
