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Success factors for a “comprehensive school”

Austria, Germany and Hungary are the only OECD countries where the comprehensive school (in Austria: Volksschule, i.e. primary or elementary school) only lasts for 4 years. In most countries, this phase of joint schooling lasts for 8 years or more. Therefore it comes as no surprise that all countries which show significantly better results in the PISA study have a clearly longer phase of joint/comprehensive schooling than in Austria. Conversely, all countries which perform significantly worse are comprehensive school systems. This means that switching to a comprehensive school system alone does not guarantee that pupils perform better at school. This study aims to explore the success criteria which mean that a longer phase of a joint school works in many countries and leads to better performances of pupils and a narrower spread between strong and weak pupils.

Background

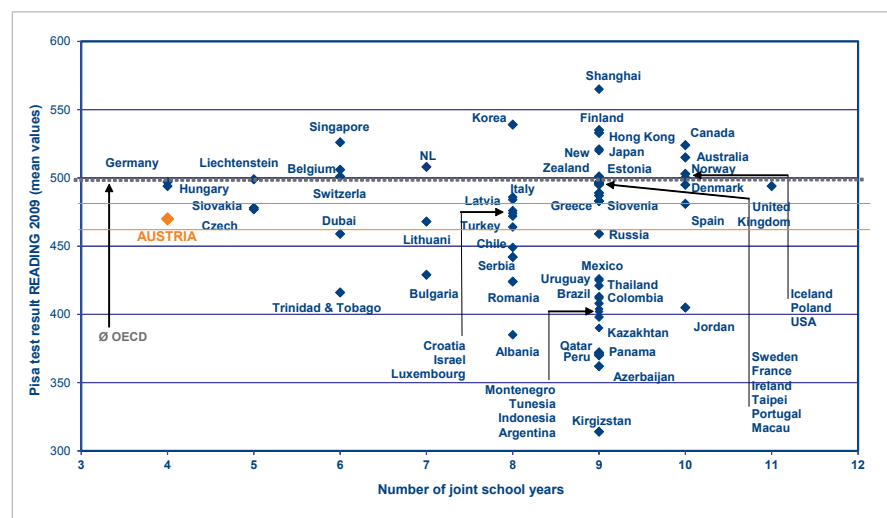
In Austria, the question of whether a “comprehensive school for six- to fourteen-year-olds” should be introduced – and therefore the early external differentiation at the lower secondary level should be abolished – has been a topic of educational policy discussions for decades. Notably since the “PISA shock” in 2004 that momentum has come back to public educational policy discussions.

Proponents of comprehensive schooling refer to results of international comparative research on student performance (PISA, TIMSS) and find a superiority of comprehensives systems. Yet, a first analysis of international pupil performance comparisons (PISA, TIMSS) illustrates the difficulty of too general statements or evaluations. This is because it is not possible to identify any differences based on the duration of joint school years if average pupil performances are used as a criterion. This finding is plausible if one considers (cf. Fig. 1) that there is a wide spread of the test results of countries with a high number of joint school years in particular. This means that a longer joint/comprehensive school time is, per se, still no guarantee for better pupil performances. In practically all countries which showed significantly better results than Austria in the 2009 PISA survey, however, young people attend a comprehensive school for

clearly longer: in Switzerland, Belgium and Singapore six years, in the Netherlands seven years – in all other countries eight years or more.

A **hypothesis** which can be formulated here is that a change to a comprehensive system by itself will not lead automatically to better student performance. It is apparently the specific “design” of comprehensive school systems (internal differentiation, individualised teaching, etc.) that is decisive for whether pupils perform well. This aspect is insufficiently reflected in current educational policy debates.

Fig. 1: Duration of joint school years and PISA test results in reading (mean values 2009)



Quellen: PISA 2009; Eurydice 2010, ibw-Internetrecherche

This study¹ focuses precisely on this information gap with the core question: **Why does the comprehensive school work in quite a few countries but not in others?** In other words: Why do the PISA top performers achieve the best average pupil performances and, at the same time, clear minimisation of the risk group and a greater share and better pupil performances of their top group?

International comparison of pupil performances

In a first analytical step, international pupil performance studies (PISA, PIRLS, TIMSS) were used to compile a concise overview of educational outcomes. To sum up:

- In most cases, the countries reach very similar performance levels in the different test domains (reading, mathematics, science) of international comparisons of pupil performance.
- The test results at the end of primary (elementary) level and at the end of compulsory schooling reveal a high tendency towards congruency².
- The top performing countries reach good test results due to a combination of minimising the share of the risk group (with better test results of the weakest pupils) while maximising the share of the top group (with better test results of the strongest pupils).
- In the top performing countries, the socioeconomic background has a less pronounced effect on pupil performance, which is also reflected in correspondingly higher shares of resilient pupils.

Impact factors for good pupil performances

In a second analytical step, there was more detailed focus on joint features and differences of the structural framework conditions and above all of input factors in the compulsory school sector of the national systems. Is it possible, for example, to identify manifest differences in education spending, the pupil-teacher ratio, the class size, the number of lessons, and the number of supporting staff? And if this is so: Do these input variables have any apparent impact on the pupils' performances? How do education systems deal with the heterogeneity of their pupils? What forms of scholastic (performance) differentiation can be observed, and do these have any impact on the pupils' performances? Another thematic field concerns the issue of whether and how different school governance regimes have an impact.

These analyses show:

- **Classic input factors cannot explain differences in performance**

Classic input factors such as education spending, the pupil-teacher ratio, class size, number of school lessons, rates of repeaters and the number of supporting staff, as well as homework etc. can only explain the country

differences in pupil performances (PISA, PIRLS, TIMSS) insufficiently.

Higher educational spending does not automatically lead to better student performance: Austria has the forth-most expensive school system and yet only average test results. PISA top performers achieve their excellent results with educational expenses per capita that are 20-30% lower than Austria's.

- **School governance is a structure that forms the framework for targets, incentives and control**

The school governance setting of a country, in contrast, is much more relevant as it defines to a large degree the structural framework, the variants and therefore also the action logic pursued by stakeholders at the school micro-level. It is precisely school autonomy (especially the areas of staff matters and the use of financial resources provided by school budgets) as an expression of the departure from the traditional top-down detail control paradigm that is important for a productive school environment and for the schools' further development dynamics. Relevant school governance structures (school autonomy, open labour market for teachers, working time regulations, external review mechanisms and accountability procedures) may set incentives that improve teaching. Therefore they can be considered a necessary precondition for good pupil performance. This is an important finding precisely for Austria with its narrow understanding of (school) autonomy.

- **Comprehensive school systems provide a better structural framework – but they alone are not sufficient to achieve better pupil performances**

Similarly, a comprehensive school structure at the lower secondary level provides a better structural framework for good pupil performances – by itself, however, it does not suffice for achieving them. This means that a longer joint/comprehensive school time is, per se, still no guarantee for better pupil performances. The finding that early external differentiation does not have any positive effect is also empirically founded. Moreover, it is noticeable that all the top performing countries in international comparisons of pupil performances have comprehensive school systems.

These countries achieve their good results by raising the performance level of the weaker pupils. This is not "at the expense" of stronger performing pupils. The fear that comprehensive school systems lead to "downward harmonisation" cannot be proven empirically. Moreover, families' socioeconomic background has a weaker impact on pupil performance in such systems.

➤ **All education systems differentiate their pupils based on performance**

Practically all school systems – and therefore also comprehensive school systems – carry out internal performance differentiations at schools. Here the countries differ, on the one hand, by the extent of affected pupils and, on the other hand, by the form of the schools' internal performance differentiation – i.e. whether groups of pupils are taught in some or all subjects. However, the differences in pupils' performances between the countries can not be explained by the extent of external (that is separating pupils into different school forms) and systemically designed, school-internal performance differentiation.

The simplistic dichotomisation of the Austrian discussion between early tracking and comprehensive schooling is obviously inadequate: Neither can it explain country-differences in student performance nor can it be used as a relevant starting point for promising educational reforms.

Analyses of the extent and forms of these performance differentiations indicate that promising approaches are mainly pursued internally at schools and consequently not in terms of early external differentiation and mostly temporary in individual subjects (and therefore not in the sense of streaming).

➤ **Individualised approaches to teaching and support constitute central elements for dealing with heterogeneity (in performance)**

Another point to explain the differences in the performance level of school systems is teacher- and teaching-related factors. The educational quality of teaching and the handling of the pupils' heterogeneity (in performance) constitute key elements: Of major importance are that teachers appropriately estimate the need for support as well as the underlying goal regarding which pupil performance level is considered the minimum level to be achieved.

Figure 2 illustrates³: The higher the difference between teachers perception and reality of shares of weak pupils, the higher teachers obviously underestimate the learning support needs of their pupils.

Countries with high differences have lower test results. Countries where learning support is overestimated (i.e. negative differences) usually have very good student performance results. Interestingly, this relationship explains about 70% of country variation in student performance.

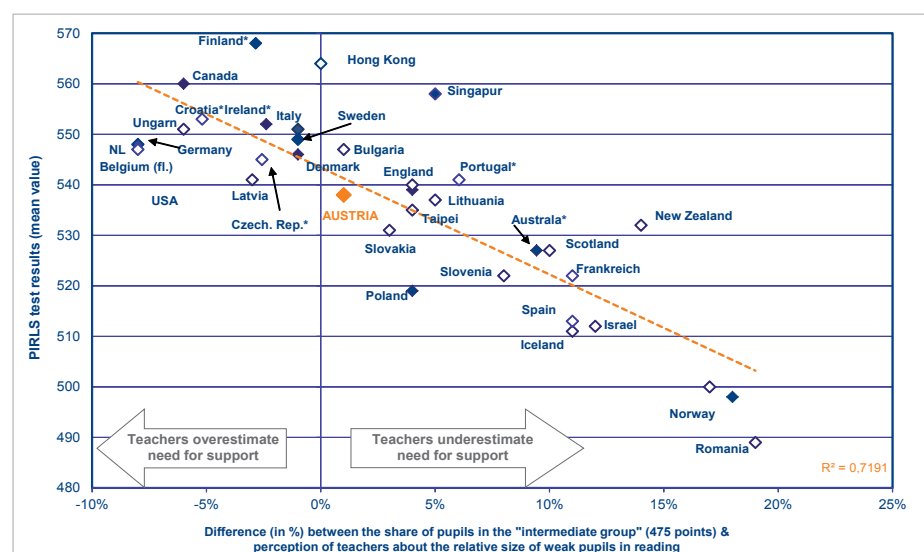
Appropriate diagnostic competences of teachers are therefore essential. They constitute the core for setting up an adequate and productive learning and support culture both in classes and in school-based tutoring.

Therefore it is necessary to systemically integrate school and teaching into related – both supporting and demanding – governance structures (school autonomy, the school's competence in staff matters, educational standards as the minimum levels to be achieved, various internal and external evaluation modes, as well as feedback and control loops).

A second step is to design and adapt school locations: full-time school forms, flexible remedial school-based support programmes, qualified socio-pedagogical support, etc.).

Both has an impact on the action logic pursued by the stakeholders at the school micro-level.

Fig. 2: Connection between the degree of reality orientation of the teachers' assessments of the need for remedial instruction and PIRLS reading literacy performances (mean value) at the end of primary level (10-year-olds)



Source: PIRLS dataset 2006 (2011 for countries *); ibw presentation

Criteria of successful comprehensive school systems

Based on the review of international research literature it is possible to identify and define potential success factors/elements which apparently bring about good pupil performance.

Successful (comprehensive) school systems are characterised by a well-balanced overall package with the following **elements of success**:

- 1. Performance-promoting governance structure:** School autonomy particularly in staff matters and for the use of funds (global school budgets⁴); nationwide uniform framework curricula as the basis of the schools' profile development⁵, external monitoring of education standards with clearly defined minimum levels (especially at the points of transition/interfaces) as well as school-internal and external evaluation.
- 2. Joint and system-wide basic philosophy of an orientation towards potential rather than selection** as well as a **culture of quality** (peer exchange, studies about model classes, self-evaluation of schools to promote critical self-reflection of the specific teaching practice, etc.).
- 3. Productive handling of the pupils' heterogeneity (in performance)**, especially by an adaptive design of classes. Performance-oriented internal differentiation: The class community is supplemented by work in small groups to support weak and develop stronger pupils. This is made possible by:
 - Well-founded and early identification of learning weaknesses and particular strengths: The teachers' diagnostic competences constitute a major prerequisite for individualised and successful learning processes.
 - Ex-ante performance diagnostics: Standardised nationwide tests to contribute towards identifying individual learning needs.
 - Flexible support of weak pupils by sufficiently supporting (remedial) instruction in the sense of internal school tutoring, temporary formation of small groups, onto longer lasting small group teaching – with the respective measure adjusted to the individual needs of weak pupils. The goal here is to raise their performance level as soon as possible to allow these pupils to return to the class community.
 - Fulltime school forms: The afternoon is either used for differentiation (tutoring, support measures, supplementary content) or regular classes are spread over the whole day.
 - Wideranging support for the school by sociopedagogically qualified staff (social pedagogues, social workers, school psychologists, etc.).

- Joint basic understanding among a school's teaching staff about the educational approach and pedagogical challenges⁶.
- 4. Continuous professionalisation of teachers** and specification of **core requirement criteria**: The main challenge is how to deal with heterogeneity (in performance).
 - The curriculum and educational standards include references to differentiation: clear separation into minimum levels for core areas and supplementary contents/additional syllabuses.
 - Work with heterogeneity as one focus of teacher training and further training; strategic staff development within the sphere of responsibility of the principal. Further training of teachers in the sense of school-based qualification requirements.
 - 5. Increasing the attractiveness of the teaching profession:** Potential-oriented recruitment mechanisms in teacher training, clear regulations concerning times of presence at school, strengthening of the cooperation between teachers at their place of work, the school (for example: joint preparation of lessons, joint teaching in teams, observation of learning and learners by colleagues/in cooperation, etc.) and, in general, performance enhancing service legislation.

The entire study can be obtained from ibw in printed form (ibw research report no. 178, ISBN 978-3-902742-81-0) or online <http://www.ibw.at/de/ibw-studien>.

¹ This study was commissioned by WKO.

² This indicates that at primary level and in the lower secondary sector of many countries very similar educational approaches are pursued which are also reflected in teaching practice and consequently in the pupils' performances. In addition, the lower secondary sector builds on the primary level. The achieved performance level at the end of the lower primary level therefore has a major impact on the performances which are or can be achieved at the lower secondary level.

³ Unfortunately the PISA dataset does not provide any precisely relevant information. But it includes an appraisal by pupils about whether they can make use of individual support by their teachers when they need it. A procedure similar to the previous analysis has indicated that the result of this appraisal by pupils reflects the result obtained from teachers.

⁴ School itself decides on the majority of used funds (particularly for extracurricular school-based support and the further training of teachers). The funding of school-based support measures/requirements is also criteria-/formally-based.

⁵ It guarantees the observation of nationwide requirements while school autonomy remains as high as possible (also related to educational and didactic orientation) to ensure that local requirements/needs are taken into account.

⁶ This also leads to the linking of the educational work of individual teachers by promoting a joint educational target and pursuing a course how this can be achieved. Enhanced cooperation among teachers and a focus on specific local needs/challenges are encouraged.