

School Inspection in Styria.

Summary of results from Austria

Herbert Altrichter, David Kemethofer und Elfriede Schmidinger, Department of Education and Psychology, Johannes Kepler University Linz, Austria

This report describes the results of the first year of data collection in the Austrian state of Styria which took place in November and December 2011. The report includes descriptive information on the main variables as well as results of some bivariate and multivariate analysis (correlations, regressions and t-tests). Due to different background characteristics of primary and secondary schools the majority of the results will be presented separately for both types of school. Primary schools in Austria cater for four age groups (6 – 9 year old). The term “secondary school” used in this study comprises “Hauptschule”, „Polytechnische Schule” und “Neue Mittelschule” (which cater for students of 10 – 15 years of age), however, does not include the lower cycle of the gymnasium-type schools (“Allgemeinbildende Höhere Schule”) which also takes in students from the same age group.

1. Descriptives

In table 1 some descriptive information about the data and the background characteristics of schools in Styria are presented. One out of ten secondary schools were inspected in the previous year, the number of primary schools inspected is 15%. Styria introduced a new way of inspecting schools in 2005/06. Nearly every secondary school and more than half of all primary schools were inspected at least once during this period. While there are differences between primary and secondary schools, Styrian principals generally spend a lot of time with administrative tasks and teaching. Most of the schools are located in smaller villages with less than 3.000 inhabitants. Due to structural characteristics of the Austrian bipartite school system “secondary schools” (in the definition of our study) cater for more students from low income groups or students who do not speak German as first language than primary schools.

Table 1: Description of participating schools

	P.S.	S.S.
Number of schools	345	149
Percentage of schools inspected in the previous year	15%	10%
Percentage of schools inspected since the introduction of “team-inspection” (since 2005/06)	54%	91%
Percentage of principals with 0-2 years’ experience	26%	27%
Percentage of principals with 3-6 years’ experience	24%	27%
Percentage of principals with >7 years’ experience	50%	46%
Percentage of time spend on administrative tasks	32% (12)	48% (16)
Percentage of time spend on teaching	36% (22)	11% (12)
Percentage of time spend on discussing education with teachers	10% (6)	13% (6)

	P.S.	S.S.
Percentage of time spend on observing lessons	6% (4)	7% (4)
Percentage of time spend on managing student behaviour	6% (5)	11% (6)
Percentage of time spend on quality assurance/self-evaluation	7% (5)	7% (4)
Percentage of time spend on other tasks	3% (10)	3% (6)
Percentage of schools in area with <3000 inhabitants:	71%	46%
Percentage of schools in area with 3000-15.000 inhabitants:	20%	42%
Percentage of schools in area with 15.001-50.000 inhabitants:	2%	4%
Percentage of schools in area with 50.001-100.000 inhabitants:	0%	0%
Percentage of schools in area with 100.001-500.000 inhabitants:	7%	8%
Percentage of schools in area with >500.000 inhabitants:	0%	0%
Percentage of schools in urban area	14%	34%
Percentage of schools in suburban area	8%	9%
Percentage of suburban schools in metropolitan area	9%	9%
Percentage of schools in rural area	71%	48%
Average number of students in the schools	89 (67)	182 (75)
Average number of fulltime teachers in the schools	7 (6)	21 (10)
Percentage of schools with majority of students (>50%) from low income groups	6%	8%
Percentage of schools with majority of students (>50%) from high income groups	12%	4%
Percentage of schools where majority of students (>50%) do not speak national language as first language	4%	5%

P.S. ... Primary School; S.S. ... Secondary School
Means, SD in parentheses

Table 2 provides an overview of means and standard deviations of all variables of the international questionnaire. The analyses include the scales which are used in the conceptual framework. Presented are means and standard derivations for primary and secondary schools separately. In general, primary schools head persons seem to be more satisfied with the school inspection. Nevertheless, the majority of secondary schools head persons are satisfied above average. As a result the acceptance and use of the feedback is quite high. Styrian principals do not feel a lot of pressure by actions of stakeholders. Furthermore, principals of both primary and secondary schools say that their school is characterized by a high status in capacity to improve as well as by effective school and teaching conditions.

Table 2: Description of variables in conceptual framework

	P.S.	S.S.
General satisfaction with school inspections (5-point scale disagree-agree)	3.98 (.65)	3.65 (.78)
Intermediate processes: setting of expectations (5-point scale disagree-agree)	3.32 (.51)	3.16 (.54)
Intermediate processes: acceptance and use of feedback (5-point scale disagree-agree)	3.99 (.62)	3.74 (.66)
Intermediate processes: promoting self-evaluations (5-point scale disagree-agree)	3.18 (.65)	3.22 (.64)
Intermediate processes: actions of stakeholders (pressure) (5-point scale disagree-agree)	1.41 (.53)	1.45 (.53)
Outcome: changes in capacity to improve (5-point scale much less-much more)	3.52 (.50)	3.70 (.45)
Sub outcome: changes in participation in decision-making	3.47 (.59)	3.69 (.61)
Sub outcome: changes in cooperation between teachers	3.52 (.50)	3.60 (.47)
Sub outcome: changes in transformational leadership	3.54 (.57)	3.80 (.55)
Outcome: changes in effective school and teaching conditions (5-point scale much less-much more)	3.39 (.35)	3.50 (.38)
Sub outcome: changes in opportunity to learn and learning time	3.24 (.39)	3.36 (.39)
Sub outcome: changes in achievement orientation (assessment of students)	3.54 (.49)	3.64 (.47)
Sub outcome: changes in clear and structured teaching	3.44 (.50)	3.59 (.51)
Sub outcome: changes in safe and stimulating learning climate	3.72 (.71)	3.80 (.67)
Outcome: status in capacity to improve (5-point scale disagree-agree)	4.44 (.39)	4.34 (.43)
Outcome: status in effective school and teaching conditions (5-point scale disagree-agree)	4.18 (.44)	3.92 (.47)
Unintended consequences on the school level (5-point scale disagree-agree)	2.31 (.52)	2.30 (.47)

P.S. ... Primary School; S.S. ... Secondary School
Means, SD in parentheses

2. Correlations between variables

To check the relationships between inspections, intermediate mechanisms and our outcome variables which have been hypothesized in the conceptual framework a number of correlations were calculated. The results of these analyses can be found in tables 3 to 6. According to preliminary analyses some scales had to be divided into subscales which are

used for correlations and further research. The scale “Taking improvement actions” is split up into “Changes in school effectiveness”, “Changes in opportunity to learn”, “Changes of assessment of otudents”, “Changes of assessment of teachers/school” and “Changes in clear and structured teaching”. “Stakeholder action” is grouped into “Stakeholder pressure”, “Parental pressure” and “Stakeholder sensitive to reports”.

Table 3: Relations school inspections and intermediate mechanisms

	P.S.	S.S.
General Satisfaction with school inspections - Setting expectations	.437**	.672**
General Satisfaction with school inspections - Accepting feedback overall	.824**	.808**
General Satisfaction with school inspections – Change in promoting self-evaluations	.062	.195*
General Satisfaction with school inspections - School effectiveness	.196*	.208*

P.S. ... Primary School; S.S. ... Secondary School

*p<.05; **p<.01

Table 4: Relations between intermediate mechanisms

	P.S.	S.S.
Setting expectations – Changes in school effectiveness	.202**	.145
Setting expectations – Changes in opportunity to learn	.105	.036
Setting expectations – Changes of assessment of students	.136	.173
Setting expectations – Changes of assessment of teachers/school	.089	.180*
Setting expectations – Changes in clear and structured teaching	.247**	.116
Accepting feedback overall – Change in promoting self-evaluations	.029	.152
Accepting feedback overall - Changes in school effectiveness	.073	.146
Accepting feedback overall - Changes in opportunity to learn	.081	.037
Accepting feedback overall - Changes of assessment of students	.030	.158
Accepting feedback overall - Changes of assessment of teachers/school	.088	.128
Accepting feedback overall - Changes in clear and structured teaching	.038	.154
Setting expectations – Stakeholders pressure	.192*	.143
Setting expectations – Parental pressure	.308**	.301**
Setting expectations – Stakeholder sensitive to reports	.104	.350**
Accepting feedback overall - Stakeholders pressure	-.040	-.123
Accepting feedback overall - Parental pressure	.142	.221*
Accepting feedback overall - Stakeholder sensitive to reports	.287**	.417**
Stakeholders pressure – Change in promoting self-evaluations	.081	-.206*
Parental pressure – Change in promoting self-evaluations	.059	.073
Stakeholder sensitive to reports – Change in promoting self-evaluations	.148	.237**
Stakeholder pressure - Changes in school effectiveness	.043	.005
Stakeholder pressure - Changes in opportunity to learn	.031	.021
Stakeholder pressure - Changes of assessment of students	.048	.191*
Stakeholder pressure - Changes of assessment of teachers/school	.092	-.133
Stakeholder pressure - Changes in clear and structured teaching	-.003	-.048

	P.S.	S.S.
Parental pressure - Changes in school effectiveness	.034	.112
Parental pressure - Changes in opportunity to learn	.028	.104
Parental pressure - Changes of assessment of students	.010	.142
Parental pressure - Changes of assessment of teachers/school	.073	.008
Parental pressure - Changes in clear and structured teaching	-.046	.125
Stakeholder sensitive to reports - Changes in school effectiveness	.168*	.222*
Stakeholder sensitive to reports - Changes in opportunity to learn	.222**	.320**
Stakeholder sensitive to reports - Changes of assessment of students	.057	.161
Stakeholder sensitive to reports - Changes of assessment of teachers/school	.155	.090
Stakeholder sensitive to reports - Changes in clear and structured teaching	.053	.159

P.S. ... Primary School; S.S. ... Secondary School

*p<.05; **p<.01

Table 5: Relations between intermediate mechanisms and outcome variables

	P.S.	S.S.
Promoting self-evaluations - High improvement capacity	.213**	.303**
Promoting self-evaluations - Effective school and teaching conditions	.072	.248**
High improvement capacity - Changes in school effectiveness	.080	.306**
High improvement capacity - Changes in opportunity to learn	-.015	.272**
High improvement capacity - Changes of assessment of students	.120*	.238**
High improvement capacity - Changes of assessment of teachers/school	.089	.258**
High improvement capacity - Changes in clear and structured teaching	.089	.222**
School effectiveness - Changes in school effectiveness	.016	.330**
School effectiveness - Changes in opportunity to learn	.014	.300**
School effectiveness - Changes of assessment of students	.016	.250**
School effectiveness - Changes of assessment of teachers/school	.049	.268**
School effectiveness - Changes in clear and structured teaching	-.032	.261**

P.S. ... Primary School; S.S. ... Secondary School

*p<.05; **p<.01

Table 6: Relations between school inspections and outcome variables

	P.S.	S.S.
General satisfaction with school inspections – high improvement capacity	.042	.217*
General satisfaction with school inspections – high effective conditions (school effectiveness)	.196**	.208*

P.S. ... Primary School; S.S. ... Secondary School

*p<.05; **p<.01

“Taking improvement actions” is significantly correlated with school effectiveness in secondary schools whereas there are no significant correlations in primary education. Nearly the same results can be observed when the taking improvement scales are correlated with

capacity building. If the stakeholders are expected to react sensitive to inspection reports schools are willing to do changes in the opportunity to learn. Pressure by stakeholders or parents seems to have nearly no effect on changes in school effectiveness. If schools are satisfied with the results of an inspection they accept the feedback and the school is considered more effective. When interpreting the results it is important to keep in mind that at the moment only first year data is available.

3. Regression analyses

To see in which extent the predictor variables explain variation in our outcome variables regression analyses were executed. The outcome variables are capacity building and school effectiveness and should be explained by the occurrence of an inspection visit, general satisfaction with school inspection, setting expectations, actions of stakeholders, acceptance and use of feedback, promoting self-evaluation and improvement actions.

Table 7: Effects of intermediate mechanisms on improvement capacity of schools (regression analysis)

Independent Variable	P.S.	S.S.
General satisfaction with school inspections	-.101 (.095)	-.021 (.089)
Setting expectations	-.024 (.082)	.080 (.101)
Stakeholder pressure	-.099 (.068)	-.082 (.081)
Parental pressure	.033 (.054)	-.012 (.063)
Stakeholder sensitive to reports	.089 (.056)	.233 (.076)**
Accepting feedback overall	.131 (.093)	-.013 (.104)
Change promoting self-evaluations	.141 (.064)*	.168 (.075)*
Changes in school effectiveness	-.013 (.112)	.021 (.124)
School inspection received	-.090 (.074)	-.004 (.132)
Constant	3.879 (.432)**	3.020 (.526)**
R square	.109	.213
Sample size	146	120

Note: dependent variable: capacity-building; B values are reported with standard error in parentheses, * $p < .05$, ** $p < .01$

Note: B values tell the relationship between predictors (independent variable) and dependent variable. If the predictor increases by one unit, the dependent variable increases by B units (depending on the units used to measure the variables). The standard error indicates to what extent these values would vary across different samples and whether B differs significantly from zero.

The regression analyses shows that in secondary schools the rate of explained variance of "Capacity building" ($R^2=.213$) is much higher than in primary schools ($R^2=.109$). Significant effects explaining "Capacity building" can be found in both primary and secondary schools in the latent variable "Change promoting self-evaluation".

Table 8: Effects of inspection and intermediate mechanisms on school effective conditions in schools

Independent Variable	P.S.	S.S.
General satisfaction with school inspections	.094 (.099)	-.066 (.089)
Setting expectations	-.012 (.085)	.138 (.102)
Stakeholder pressure	.053 (.071)	-.053 (.064)
Parental pressure	-.036 (.056)	-.051 (.082)
Stakeholder sensitive to reports	.179 (.058)**	.325 (.077)**
Accepting feedback overall	.016 (.096)	.022 (.105)
Change promoting self-evaluations	.008 (.066)	.049 (.076)
Changes in school effectiveness	-.016 (.116)	.276 (.125)*
School inspection received	-.176 (.077)*	-.110 (.133)
Constant	3.490 (.447)**	1.896 (.530)**
R square	.141	.301
Sample size	146	120

Note: dependent variable: school effectiveness; B values are reported with standard error in parentheses, * $p < .05$, ** $p < .01$

Note: B values tell the relationship between predictors (independent variable) and dependent variable. If the predictor increases by one unit, the dependent variable increases by B units (depending on the units used to measure the variables). The standard error indicates to what extent these values would vary across different samples and whether B differs significantly from zero.

A second regression analysis using "School effectiveness" as dependent variable shows that the latent independent variables used in the model explain 30.1% of the variance in secondary schools and 14.1% of the variance in primary schools. In secondary schools the latent variable "Stakeholder sensitive to reports" and "Changes in school effectiveness" have significant influence on the dependent variable. "Stakeholder sensitive to reports" and "School inspection received" have significant influence in primary schools.

4. Comparing schools (t-test)

To check for differences between primary schools and secondary schools a number of t-tests were calculated. The scales "Improvement capacity", "School effectiveness" and "Time spent on changes" were analysed. Whether or not a school has received an inspection visit within the last academic year is used as the basis of the following analyses.

Table 9: Comparing inspected and not inspected schools

Independent Variable	P.S.	S.S.
Capacity-building	.096 (318)	-.109 (144)
School effectiveness	1.388 (318)	1.958 (144)
Change in capacity building	.166 (311)	-.974 (142)
Change in participation in decision making	.237 (303)	-1.282 (141)

Change in cooperation between teachers	-0.027 (305)	-0.926 (142)
Change in transformational leadership	.539 (302)	-0.814 (140)
Change in school effectiveness	-0.732 (312)	.552 (142)
Changes in opportunity to learn	.531 (309)	-0.276 (139)
Changes in assessment of students	-0.894 (304)	.183 (138)
Changes in assessment of teachers/school	-0.119 (303)	1.245 (137)
Changes in clear and structured teaching	-1.116 (304)	.275 (137)
Changes in safe and stimulating learning climate	-0.768 (311)	.487 (140)
Changes in promoting self-evaluation	-0.380 (303)	-1.625 (140)

Note: t-value, df between brackets, * $p < .05$, ** $p < .01$, mean differences reported for significant differences

Note: some variables (e.g. accepting feedback) not administered in non-inspected schools, therefore not included in the table.

Note: Levene's test shows if the variances in the two groups are equal. If this test is significant then we can conclude that the variances are significantly different.

As table 9 shows there are no significant differences, neither in primary nor in secondary schools. This may be a result of the fact, that the number of schools observed in the last academic year is only 13-15 in secondary schools and 45-48 in primary schools.