
1 Innovative Learning Environments: 2 about traditional and new patterns of learning

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8 ABSTRACT How can the conception of formal learning environments like schools foster individual
9 learning and the acquisition of the competences necessary for a rewarding participation in the
10 knowledge societies of the twenty-first century? Just how important learning has become as an issue for
11 society is demonstrated by the interest shown in the subject by the Organisation for Economic
12 Cooperation and Development (OECD). A project launched by its Centre for Educational Research
13 and Innovation (CERI) in a number of countries (including several European countries, among them
14 Austria) focuses on how ‘innovative learning environments’ (ILE) can contribute to offering
15 meaningful and sustainable learning experiences for learners in the twenty-first century. This article
16 presents the main findings of the Austrian part of the project and discusses whether and how the
17 development of ILEs is possible against the background of school routines and a school system that –
18 despite a number of reform projects – seems to be successfully resistant to change. The article focuses
19 on the question of whether and how learning is made meaningful for the pupils and whether and how
20 those learning environments identified as innovative really do support fruitful and meaningful
21 processes of learning.

22 Introduction

23 Learning and how it can be fostered have now become genuine matters of public interest.
24 Although there has always been an interest in learning, a real hype in the topic has been seen in
25 recent years. But it is not just those disciplines that have traditionally focused on the topic – like
26 cognitive science, psychology and the educational sciences – that are now dealing with this subject:
27 economics and politics have also discovered learning as a crucial aspect. With the emergence of the
28 knowledge society, lifelong learning has become a necessity for twenty-first century society.
29 Against this background, the Organisation for Economic Cooperation and Development (OECD)
30 launched a project by the name of Innovative Learning Environments (ILE). Initiated by the
31 OECD’s Centre for Educational Research and Innovation (CERI), the ILE project sought to identify
32 and analyse learning environments which had developed effective and/or efficient ways and
33 methods of helping pupils to develop the competences and skills needed in the twenty-first century.
34 Such environments should support active learning processes and foster the ability of learners ‘to
35 apply knowledge and skills flexibly and creatively in a variety of different contexts’ (OECD, p. 3).
36 The project is organised in three strands: the learning research strand (2008-2010), the gathering of
37 innovative cases (2009-2012), and implementation and change (2011-2013). The goals of this project
38 are to serve the international reform agenda in education by, ‘[a]nalysing and synthesising current
39 international research findings on learning, teaching and learning environments’ in the learning
40 research strand, ‘[i]dentifying and analysing examples of innovative learning environments from all

41 over the world' in the innovative cases strand, and, finally, '[e]ngaging with the community of
42 policy reformers, innovators and learning scientists to discuss how to make better use of these
43 findings to make OECD education systems learning driven' (OECD, 2013a).

44 A learning environment is considered as innovative if 'the cases represent specific whole
45 learning environments rather than programmes or particular courses, and [if] they are not so
46 exclusive as to have no relevance for others'. Apart from this, the 'selection instructions left the
47 nature and extent of the innovation quite open to interpretation [if] an intentional departure from
48 the traditional approach of the large body of general or vocational education in its own context
49 [can be identified] – i.e. it is deliberately innovative' (OECD, 2013b, p. 25).

50 In the following article, the researchers in the Austrian ILE project team examine whether
51 and how those Austrian learning environments that were identified as innovative in line with the
52 above mentioned selection instructions do actually support pupil performance in the intended
53 sense, and whether this notion is, in turn, congruent with what school research considers to be the
54 central aim of learning processes, namely to support the fruitful moments of learning and,
55 consequently, to trigger off transformative experiences as instances of education in the sense of the
56 German concept of *Bildung* (see Copei, 1966; Meyer-Drawe, 2008).

57 OECD Project – Innovative Learning Environments

58 Since primarily teacher-centred forms of instruction no longer meet the needs of increasingly
59 heterogeneous learning groups in a rapidly changing society, the ILE project focused on a
60 reorientation of learning and teaching settings (cf. OECD, 2009, p. 1). Innovative learning
61 environments are supposed to take up current challenges of the educational system (like social,
62 cultural and linguistic heterogeneity) and the increasing need to individualise learning processes;
63 they are supposed to foster the capacity of pupil achievement and improve equal opportunities in
64 education systems. Accordingly, over 150 innovative cases have been brought together, 40 of them
65 having been subject to more in-depth case study research analysis. Apart from Austria, among the
66 participating European countries (along with other OECD countries, such as Canada, Mexico and
67 New Zealand) were the Czech Republic, Denmark, Finland, Germany, Hungary, Italy, Norway,
68 Slovenia, Sweden, Switzerland and the United Kingdom (OECD, 2013c).

69 *Austria's Contribution to the ILE Project*

70 In Austria, the Federal Ministry of Education supported and led the national project team which
71 consisted of four research groups, each made up of experts in school research from the ministry,
72 three universities and three teacher training colleges. Seven Austrian schools (from primary to
73 upper secondary level), which met the basic OECD criteria, were chosen to be evaluated by the
74 research teams in order to determine how the innovation had emerged and how it had fostered
75 learning.[1]

76 The project team worked together to develop the national research design for Austria based
77 both on the OECD's guidelines and on most recent findings of learning research. Accordingly, the
78 Austrian research team endeavoured to find a theoretical framework for the learning process which
79 reconceptualised current ideas about learning from the teaching perspective based on ideas found
80 in educational philosophy (for more on this see, Schrittmesser, 2007, 2011a, 2011b; Meyer-Drawe
81 2008). Seen from this perspective, learning takes place not just out of innate curiosity as, for
82 instance, cognitive psychology would argue (see **Ryan & Deci, 2000, p. 56 NOT IN
83 REFERENCES. PLEASE SUPPLY DETAILS**), but from existential necessity: humans learn in
84 order to cope with life. Learners, therefore, always have good reasons for learning, and it is these
85 reasons which shed light both on how learning should be contextualised – particularly in school
86 practice – and on how it can be fostered (or hampered). The teacher's role is to offer learners these
87 good reasons and, consequently, to initiate fruitful moments for learning (Holzkamp, 1995).

88 The Austrian research team focused on studying formal institutionalised learning settings to
89 find out how mainstream schools in Austria deal with the challenges they currently face. The
90 introduction of innovative practices in such institutionalised settings was considered to be

91 particularly challenging for the Austrian school system and its teachers and was therefore seen as a
92 valuable learning setting for the Austrian research.

93 The main challenges in Austria's current school system are the handling of an increasingly
94 diverse pupil population, a highly selective and relatively reform-resistant school system (including
95 deficits in teacher education), and a tendency towards outdated assessment strategies. While the
96 standard model of schooling in Austria has a long tradition of stability and relatively limited
97 change, innovative learning environments have to be understood as more flexible environments
98 that redesign the standard model and adapt it to the needs of the learners. Consistent with the
99 OECD's framework, innovations were defined as attempts on the part of the school to develop
100 new ways of meeting the challenges of learning in the twenty-first century. Innovations in this
101 sense change traditional settings to make learning more meaningful, more rewarding, and more
102 effective for the learner.

103 According to Sawyer (2008, p. 58), the most effective learning environments make
104 'customized' learning experiences possible, offer diverse knowledge sources, support collaboration,
105 and aim at conceptual understanding, which is reflected in assessment strategies that evaluate to
106 **which REPLACE WITH 'WHAT'?** extent the knowledge of pupils 'is integrated, coherent, and
107 contextualised'. Based on this theoretical concept, the Austrian project team aimed to answer the
108 following questions for the individual learning environments:

- 109 • How is learning organised? Which aspects can be identified as innovative?
- 110 • Which reasons for learning and which opportunities to learn are provided?
- 111 • How is assessment carried out?
- 112 • Which aspects in general encourage (or inhibit) learning at both the micro and the school levels?

113 Using this common basis, the Austrian research groups selected seven potential learning
114 environments out of twenty cases in detail. The data collected formed the empirical basis for the
115 individual case studies as well as for a national meta-study on the role of head teachers. The results
116 of this research were presented and discussed at a large conference at the University of Innsbruck in
117 November 2011. Representatives of the seven participating schools were invited to attend this
118 conference at which the research teams also introduced a book (Schrittesser et al, 2011) containing
119 the initial project findings.

120 **X-raying the Learning Environment**

121 Essentially, the main interest lay in determining whether and how the learning environments
122 studied facilitate learning and which factors of these environments help to make learning
123 meaningful for the learners. Accordingly, the Austrian research team decided to use a mix of
124 perspectives which would allow them to 'x-ray' the learning environment and uncover as many
125 facets and specificities as possible. Five specific approaches were incorporated into the study
126 concept: (1) document analysis; (2) individual interviews with head teachers; (3) group interviews
127 and individual stimulated recall [2] with teachers; (4) group interviews with pupils; and (5)
128 classroom observation (videotaping of lessons in which researchers also sat in and made additional
129 notes).

130 As explained above, the purpose of this multi-dimensional approach was to open up various
131 perspectives on the teaching and learning processes and to allow the researchers to grasp the
132 different facets from different angles. **NEED TO ADD SOMETHING HERE TO LEAD INTO**
133 **THE LIST BELOW?**

- 134 1. Document analysis was used as the door opener for the case study and was intended to obtain
135 an initial impression of how the school in question presented itself to the public. The school
136 websites, mission statements and documents developed by the teachers in the course of their
137 school development activities were all analysed in detail.
- 138 2. The interviews with the head teachers were intended to provide an idea of how leadership was
139 interpreted at the school, as well as the effects this had on the design of the learning
140 environment adopted by the school and on the attitudes of teachers and pupils towards
141 learning and teaching.

- 142 3. The group interviews and individual stimulated recalls (Calderhead, 1981) with teachers were
143 intended to highlight the participants' own particular perspectives and views of their roles,
144 their relationship to the pupils, and how they felt learning should be organised.
145 4. The group interviews with pupils were conducted for the same reasons. In these interviews,
146 the focus lay on whether and how the pupils felt responsible for their own learning processes
147 and whether and how they felt supported by their teachers.
148 5. The classroom observations were conducted on two consecutive days, namely the first four
149 lessons on a Monday and a Tuesday. Mondays were considered to be particularly informative
150 as they showed how pupils got back down to schoolwork after the weekend and how they
151 started the week. These classroom observations gave the research teams an insight into the
152 concrete arrangements and patterns of interaction. They also helped to understand whether
153 and how the ideas on learning articulated by the head teachers, the teachers, and by the pupils
154 found their way into the classroom.

155 In essence, this approach provided an elaborate narration of the respective school cultures, which
156 the research team subsequently sought to analyse and interpret.

157 First of all, the data was analysed using grounded theory. Since the procedures in grounded
158 theory are aimed at identifying, developing and relating a storyline in the collected data based on
159 concepts generated from this data, this approach was considered to be an appropriate way of
160 revealing the immanent patterns of meaning and obtaining a 'thick description' (cf. Geertz, 1973).
161 Since both deductive (e.g. preceding assumptions drawn from learning theories) and inductive
162 aspects (concerning the analysis of the data) played a role in the study, the concept developed by
163 Strauss and Corbin (1990, 1998) seemed appropriate for the purposes of this project. The concepts
164 and evolving categories uncovered through the various coding activities were used to look for the
165 key ideas inherent in the data and served as answers to the main questions in the research process.

166 The initial results provide a provisional impression of the factors that could be deemed to play
167 a relevant part in facilitating learning in school. While these factors will be described in detail later,
168 the unisonous manner in which the **principals REPLACE WITH 'HEAD TEACHER' FOR**
169 **CONSISTENCY?**, staff and pupils talked about their respective learning environments suggested in
170 the initial analysis that the learning environments studied did indeed achieve the criteria identified
171 for effective and meaningful learning.

172 However, as will also be seen, it was only in a second analysis that some cracks in the
173 seemingly smooth picture were revealed. But before we go on to examine these in any detail, let us
174 first give a short description of the two schools in question, and take a look at some of the initial
175 results, which focus on the factors that were identified as relevant to facilitating learning in school.

176 *School A: new middle school in Linz (capital of the Province Upper Austria)*

177 The new middle school which was examined by the research group from the Universities of Vienna
178 and Innsbruck views itself as a 'project school' in terms of its approach to heterogeneity and
179 internal differentiation. The school's pupils come from very different social backgrounds – from
180 academic, as well as from working class backgrounds. The school considers its highly individualised
181 approach to learning and to assessment to be innovative in the Austrian school system. This allows
182 pupils to assume a great deal of responsibility for both their own learning processes and those of
183 their schoolmates. Last but not least, diversity is considered to be a source of learning rather than a
184 reason for tension in classroom interaction. All this awoke the researchers' interest in this school,
185 prompting them to take a closer look at how learning happens there and to examine whether the
186 goals set by the school were actually reached.

187 *School B: grammar school in Vienna*

188 The second case is a traditional grammar school in a so-called 'good area' of Vienna, whose focus is
189 on supporting pupils to perform with excellence by introducing new teaching methods. The
190 school's pupils mostly come from academic family backgrounds, i.e. their parents are often doctors,
191 lawyers, teachers or businessmen. The parents seemed to be highly supportive of the recent
192 innovations introduced by the head teacher and staff. The researchers found this school interesting

193 because it seemed to be searching for a new profile to replace its former traditional grammar
194 school image. They also felt that it offered an interesting contrast to the Linz case study.

195 **Initial Results**

196 *The Professional Concept*

197 The attitudes of the head teachers and their staff – in particular the way they interpret leadership –
198 proved to play a central role in facilitating the innovations introduced. The way teachers view
199 themselves and the realisation that they belong to a professional group with all the associated
200 consequences seems to be a crucial aspect for successful teaching and learning. Even though the
201 term ‘professional’ is not explicitly mentioned in the interviews, it could be determined from the
202 way responsibilities and tasks were described by the teachers that wherever professional awareness
203 was present, the teachers acted in a well reflected manner that was oriented towards the individual
204 learning capacities of the pupils and their common educational goals.

205 *High Levels of Support for Learning*

206 Whenever the research team identified strong positive support for pupil learning on the part of the
207 teachers – no matter whether the pupils were disadvantaged, fast or slow learners – pupils
208 demonstrated not only interest, but also autonomy in learning, showed mutual respect for their
209 classmates and their teachers, and exercised some control over the selection of activities related to
210 their learning. The teachers aimed to promote pupils’ learning by making them understand that
211 learning matters and by clarifying why enhancing one’s knowledge of the world and acquiring as
212 many competences as possible might be important. These aspects became evident in the way
213 teachers talked about their pupils and pupils talked about their learning activities in the interviews.

214 *Assessment as a Means of Promoting Learning*

215 As we know both from research findings and from learning theories, the forms of assessment
216 applied in a school have a crucial effect on learning. This aspect also proved true in the project
217 described in this article. All the teachers and head teachers studied gave a good deal of thought to
218 how to turn traditional forms of assessment into new and more meaningful forms. Formative and
219 feedback based assessment were shown to positively support learning and seemed to have an
220 enormous impact on the way pupils view their own commitment in class. The schools had shifted
221 their focus from selective assessment procedures to a feedback approach designed to make pupils
222 aware of their strengths and weaknesses and provide them with guidance to improve their work.

223 While these general aspects seemed to coincide with the criteria expressed at the start of the
224 project, the research team decided to take a second look at the findings. Somehow the results
225 seemed to be too smooth. While the fruitful moments of learning were pointed out as being in
226 abundance in almost all the interviews, most of the lessons observed left a more traditional
227 impression on the researchers. For this reason, the observation data (transcripts of several lessons)
228 for the two specific schools described above were re-examined using a further analysis method (the
229 documentary method).

230 **A Second Look at the Empirical Data**

231 To go beyond the first impressions obtained in the initial analyses it seemed necessary to delve
232 deeper into the material. According to Erickson (1982, p. 166), school lessons are ‘educational
233 encounters’ in which teachers and pupils follow and use normative and evaluative rules to present
234 themselves as actors. Such rules are well-known to the participants and do not need to be
235 explained. That is why they are able to communicate and understand each other ‘naturally’.
236 Different methods can be used to reconstruct the tacit knowledge and latent rules that underlie
237 such interactions. One such method is the documentary method that has been developed by Ralph
238 Bohnsack over the last 30 years based on the ideas of Karl Mannheim (1980). Initially used for the

239 analysis of group discussions, this method has since been extended to allow it to be used for the
 240 analysis of interviews (cf. Nohl, 2010), photographs and films (cf. Bohnsack, 2007). In our case, it is
 241 used to analyse real lessons in schools (cf. Bonnet, **2011 NOT INCLUDED IN REFERENCES OR**
 242 **SHOULD THIS BE 2009?**). To help the reader better understand the documentary method – and
 243 show its potential for re-examining our initial results – some main assumptions and features of the
 244 method are outlined below.[3]

245 The documentary method distinguishes between two types of knowledge: *discursive* (i.e.
 246 knowledge which the actors can speak about, e.g. in descriptions, argumentations, evaluations) and
 247 *practical* or incorporated knowledge (which usually cannot be explained in language). The latter is
 248 the tacit knowledge that is embedded in the routines of everyday life. These routines are taken for
 249 granted and help us to know what to do next. Because the participants share the same conjunctive
 250 space of experience, they are able to act and interact ‘naturally’ in a social context. Gaining access
 251 to this space requires a change in analytical stance: from the question of *what* constitutes social
 252 reality from the actors’ perspective to the question of *how* this reality is produced in their actual
 253 practice. The modus operandi of practical action has to be reconstructed with the aim of looking
 254 below the surface and identifying general frames of orientation.[4]

255 In line with documentary method traditions, and with the addition of some specific elements
 256 for studying school lessons, our analysis was conducted in four steps (for a general description, see
 257 Bohnsack, 2010; Nohl, 2010; for the specific analysis of school lessons, see Bonnet, **2011 NOT IN**
 258 **REFERENCES OR SHOULD THIS BE 2009?**). At all stages, our interpretation was bound by
 259 horizons of comparison to identify the regularities and particularities of the individual cases (cf.
 260 Nohl, 2010, p. 203).

261 In step one, the content structure of the lessons was identified – the beginning, the repetition
 262 phase, the introduction of new topics, and so on. The smallest units are the ‘passages’ in which
 263 different topics are dealt with. By paraphrasing the contents of the passages, what has been said is
 264 summarised (formulating interpretation). The goal of step two (reflecting interpretation) is to
 265 reconstruct the frames of orientation by identifying the how, i.e. the modus operandi. To gain
 266 access to the inner logic which holds the utterances and interactions together, so-called focusing
 267 metaphors – passages of metaphorical and interactive density – have to be identified (Bohnsack,
 268 2010, p. 104). These passages are subjected to a comparative sequential analysis to explicate the
 269 frames of orientation by comparing similar passages. In step three, the lessons are summarised
 270 from a new perspective, namely that of the framework of orientation which had been found. The
 271 main features of the cases are then summarised in case descriptions. In step four, the typification
 272 phase, one or more *tertium comparationis* have to be found using an abstraction process. A *tertium*
 273 *comparationis* is an aspect, term or idea which restructures the topics from a new (‘third’)
 274 perspective. The orientation frameworks thus reconstructed are abstracted, detached from the
 275 unique case, and formulated as types (Nohl, 2010, p. 211). The sense-genetic type formation shows
 276 how different orientation frameworks are by making the patterns more and more dense and
 277 homogeneous. The sociogenetic type formation as a last step includes further criteria (e.g. in our
 278 case the type of school) to elucidate differences and commonalities beyond the patterns already
 279 found.

280 *The First Findings put into Perspective: differences between schools*

281 After identifying the structure of the lessons and the topics on the agenda, the learning processes
 282 and how they were initiated, supported and judged then formed the focus of interest. To reveal the
 283 inner logic and latent processes in which learning is embedded, what was said by the teachers and
 284 pupils, the interactions between teachers and pupils, and the interactions between the pupils now
 285 became the objects for the analysis (especially those utterances, processes, phrases which were said
 286 simply as a matter of course or which seemed to occur ‘naturally’ as commonplace events). The so-
 287 called practical knowledge of the actors becomes evident in such passages. When the lessons had
 288 been summarised as case descriptions, a *tertium comparationis* became visible, namely the
 289 collective expectations towards learning. Two different types of culture emerged as underlying
 290 frames of orientation: a performance-orientated culture and a support-orientated culture.

291 In the performance-orientated culture, pupils are (1) **IS THIS NUMBER AND THE**
292 **FOLLOWING ONES NEEDED OR CAN THEY BE DELETED? THE NUMBERS ARE NOT**
293 **REFERRED TO ANYWHERE ELSE** motivated by emphasising speed and performance ('Come
294 on, see to it that you finish your exercise!') and the best pupils are addressed directly ('Right. And
295 the clever ones amongst you: what are you left with?'). The pupils are reminded that (2) the results
296 of learning processes are important by drawing their attention to future examinations, like the
297 matriculation exam they will take when they reach level 12, even though the classes observed were
298 only level 7. The teacher points out that the pupils, who are currently 13 years old, have to know
299 what a 'reading comprehension' is and – more importantly – she assumes that the matriculation
300 exam is definitely what the pupils are aiming for:

301 If there are any difficult words, forget about them, just try to get what you understand. This is
302 meaning comprehension. Reading comprehension. When you take the matriculation exams, it
303 will be part of the written exam.

304 Such high expectations are also encountered in a computer studies class. Here, the pupils were
305 given some exercises to do, and the teacher indicated that anyone scoring less than 100% would be
306 an exception. Expectations are also expressed (3) regarding responsibility. In the performance-
307 orientated culture, pupils are reminded that they are responsible for themselves and their own
308 learning success. The following scene took place in a physics class (grammar school):

309 *Teacher* (stopping next to a pupil): Where is your book, young man?

310 *Pupil*: I forgot we had physics today.

311 *Teacher*: You forgot you had physics today.

312 *Another boy*: He wasn't here yesterday.

313 *Teacher*: I'm sure he can defend himself! It's nice that you want to help him, but I think he can do
314 that on his own.

315 The teacher's message is clearly articulated in the use of the words 'I'm sure he can defend himself':
316 pupils are not allowed to help each other. A 'self-made pupil' is a solitary fighter who must be able
317 to 'defend' himself or herself. He or she is responsible for his or her own failures and – of course –
318 also for his or her own success. Although wanting to help each other is judged to be 'nice', the
319 focus here is not on solidarity and giving support, but on looking after yourself. This expectation is
320 accompanied (4) by clear expectations about how pupils should learn, what they should learn, and
321 how learning should be monitored and controlled. Learning methods are defined and controlled by
322 the teacher; individual variations are not accepted. The teachers emphasise the content in the
323 lessons. Only short instructions are given on what to do, while the topics themselves remain in the
324 foreground. It is the teacher who checks homework and classroom exercises: the pupils are asked
325 to put their homework on the teacher's desk, instructed to call the teacher when they have finished
326 an exercise, and are not permitted to ask for help from their classmates. If a pupil is not able to
327 finish an exercise in class, he or she has to complete it at home, an approach that serves as another
328 way of reminding pupils to hurry up and finish on time. In addition, the controlling aspect becomes
329 visible in the repetition phases at the beginning of the lessons: they are staged as test situations to
330 check what selected pupils know and have learned. A final feature is (5) the fragmentation of time,
331 which becomes visible in the rituals carried out at the beginning of the lessons when the teacher
332 checks the register, makes a note of any pupils who are absent, and greets the class with phrases
333 like 'Good morning class!', 'Sit down!' or 'Take your seats, please!'.

334 In the support-orientated culture, pupils are (1) motivated by emphasising their success and
335 giving them confidence ('Correct! That's absolutely correct! I knew you could do it!').
336 Heterogeneity is viewed as 'normal' ('As I went around the class, I realised that you have naturally
337 all reached different stages of development'). Pupils are reminded that (2) they should focus their
338 interest on the current learning process and not on some future event. They are expected (3) to
339 assume responsibility for their classmates and their learning processes. The following passage is
340 taken from a math lesson (new middle school).

341 Teacher: When you're ready, wait till the person next to you is ready too and then you play
342 teacher again. Then swap over ... You're now responsible for correcting your neighbour's work –
343 and for correcting it properly.

344 The pupils are trained to monitor their own progress and check the results of others. They are also
345 expected to do so in a serious manner and not simply give them a perfunctory glance. This is a
346 common routine for the pupils, and the teachers support this routine by preparing worksheets with
347 the correct answers which they hang on the classroom notice board. The message that the teacher
348 is communicating is that pupils should help each other. Pupils are expected to show solidarity and
349 give each other mutual support and they do indeed assume this responsibility without any sign of
350 impatience. In fact, they seem to take doing so for granted, as another scene in a math lesson (new
351 middle school) shows:

352 C: Will you help me?

353 G: What do you need?

354 C [holds up the worksheet]: I don't know how to do this, how to draw the angle.

355 G: You don't know how to?

356 C: Nope!

357 G [gets up, walks over and leans towards C]: You've got this, I mean the angle, like mine – not
358 that angle. Rub that one there out first.

359 C: Okay, I'll get an eraser.

360 The expectation to provide mutual support is accompanied (4) by emphasising different ways of
361 learning and encouraging pupils to find the way that suits them best. There is no disgrace in having
362 a problem – that is just seen to be 'normal'. The teachers give pupils the feeling that they are not
363 alone and that they can expect help from them. In addition, they show great interest in ensuring
364 that all pupils learn by motivating them to repeat the material they have already learned.
365 Repetitions at the beginning of the lessons are used to consolidate everyone's knowledge, not to
366 test pupils. In this type of culture, the school day is (5) less fragmented due to the presence of a
367 designated teacher in all main subject classes. This teacher is there to provide additional assistance
368 and ensure continuity throughout the day. One visible sign of this continuity is the lack of rituals at
369 the beginning of lessons. Classes simply start with a statement like 'Okay, so today we have a
370 practice lesson!' or 'Okay, then let's go on!'. The use of the pronoun 'we' demonstrates that both
371 the teachers and the pupils are responsible for learning and are co-constructors in the processes that
372 will take place during the lesson.

373 When we sum up this second analysis using the documentary method, it becomes evident
374 that a 'conjunctive space of experience' (Bohnsack, 2010, p. 105) must exist. The actors understand
375 each other immediately. For example, the teachers can be sure that their pupils realise when a
376 lesson starts, and the pupils behave in the correct way by becoming quiet and listening.

377 When we take another look at the background information provided on the Austrian school
378 system, it comes as no surprise that the performance-orientated culture was found in the grammar
379 school (*Gymnasium*, school B), whereas the support-orientated culture was found in the new middle
380 school (*Neue Mittelschule*, school A). Grammar schools are traditionally the schools for the elite,
381 while new middle schools are essentially – depending on the area and local situation – secondary
382 schools for children from less privileged backgrounds. In the latter, the main aim is not to ensure
383 pupils reach and pass the matriculation exam (*Matura*), but to improve their learning strategies and
384 encourage them to continue learning despite their potentially non-supportive backgrounds.

385 *What the Schools Have in Common*

386 However, there was one aspect which was surprising. Although the schools differ enormously in
387 their bias towards supporting learning, further analyses of the data showed that learning is
388 understood in both schools as a reproduction of the knowledge and information presented to the
389 pupils by the teachers. Learning processes which might be initiated by a fruitful moment and

390 become a transformative experience do not occur, are ignored, or are consciously prevented. To
391 demonstrate this point, we will now analyse three passages in detail.

392 *Scene 1: Physics lesson (grammar school)*

393 *Teacher:* Why do we actually need resistors? Resistors are also very important components in
394 electronics. For what purpose, Michael?

395 *Michael:* To restrict the voltage?

396 *Teacher:* Not the voltage, but ...

397 *Michael:* ... the electric current?

398 *Teacher:* To restrict the electric current. Why is this necessary? Many components in electronics
399 cannot tolerate high current. That's why resistors are really important.

400 The scene starts with an open question posed by the teacher. But without any hesitation she
401 immediately gives the answer herself by carrying on with another question. The pupil gives the
402 wrong answer, but the teacher prompts him to find the right one with a 'but', thereby expecting
403 the pupil simply to finish the sentence. Without waiting she continues, formulating another
404 question and again giving the answer herself. She obviously wants quick, correct answers – not
405 wanting to waste time that could be used on additional content.

406 *Scene 2: English lesson (new middle school). The pupils have been given the task of writing a telephone
407 conversation with a person called Pete. They practise the conversation in class.*

408 *Teacher:* In this exercise ... it's not important that everybody produces the same answers as we do
409 in this first practice run. You can all think up your own answers – with the exception of the first
410 sentence.

411 *The teacher picks a pupil and gives him the following instructions: Ask whether you can speak to Pete. First
412 you have to pick up the phone and say hello. Then you need to introduce yourself.*

413 *Teacher:* First you have to say your name. Hello, this is Paul. I would write this: 'Hello, this is
414 Paul. May I speak to Pete?'

415 *The teacher starts pre-formulating questions in German and expects the pupils to translate them and
416 answer in English. After one boy had said the first sentence, he says: 'Exactly, now you have to ask how
417 Pete's weekend was'. Then later, he prompts the pupil: 'Now ask if he's alright!'*

418 In this example, a little room was opened for options, but only very briefly. The teacher guides the
419 pupils to the correct sentences by telling them exactly what to do. The teacher knows the correct
420 way to do this and wants the pupils to follow him and do as he does. Trying things out for
421 themselves appears to be neither desirable nor possible. The pupils accept this form of instruction –
422 for them, it seems to be a routine which they do not call into question. Quite the opposite, they
423 seem thankful for being helped in this way. Although it happens in a friendly and appreciative
424 atmosphere, learning here is interpreted as being the repetition of known answers. Ideas on the
425 part of the pupils have no opportunity to develop.

426 *Scene 3: Physics lesson (grammar school). The teacher starts with an experiment using lemons to
427 demonstrate the use of a voltmeter.*

428 *Pupil (raising her hand):* Does this only work with a lemon, or would it work with something
429 else, too?

430 *Teacher:* It would work with something else, too. But I am going to show you something totally
431 different now.

432 This scene had the potential to turn into a 'fruitful moment of learning'. However, the 'real'
433 question asked by the pupil is ignored. The pupil herself questions what she has heard and seen.
434 She wants to find out about something that came into her mind as a result of observing the
435 experiment. The teacher does not realise the potential of this moment. There would have been
436 several options to continue, for example by involving the whole class and getting them to think
437 about the question, by providing a more precise and detailed answer to the question, or by letting
438 the pupils experiment with 'something else' – whatever that might be. The teacher would have

439 been able to encourage further questions and start ‘dancing’ around the subject, with the pupils as
440 co-constructors of their learning processes. By doing so, learning would have become meaningful
441 to them. However, in this case, the question seems to disturb the continuation of further
442 experiments with the voltmeter and is therefore only answered curtly and in vague terms. The
443 lesson is planned through to the end, there are only a few minutes left, and the teacher wants to
444 finish what she has prepared. It is not even sure whether the teacher really intended to induce such
445 a critical moment. But even if she did, she ignored it when it happened (cf. Combe & Paseka, 2012).
446 Pupil questions as basis for a dialogic learning environment are not allowed to emerge, and a
447 monologic discourse dominates both in this situation as well as in those described above (cf.
448 Nystrand et al, 2001, p. 5).

449 **Conclusion**

450 At first glance, the Austrian schools involved in the ILE project gave the impression that they had
451 met the OECD criteria and had actually created innovative learning environments. The analysis of
452 *what* was said in the interviews with the head teachers, the teachers and even the pupils produces a
453 coherent picture. However, when the research team also sought to look beneath the surface to
454 identify the latent structures that underlie the behaviour of teachers and their pupils, a somewhat
455 modified picture appeared. By applying the documentary method to determine *how* teachers teach
456 and pupils learn, two frames of orientation could be identified with regard to the expectations of
457 learning. The way pupils are encouraged, the kind of support they receive, and the manner in
458 which they are addressed by their teachers differ considerably between the two schools.

459 However, a homologous pattern was revealed with regard to the understanding of learning.
460 In both schools studied, lessons take the form of a monologic discourse in which fruitful moments
461 of learning can scarcely arise. Those that do are largely ignored by teachers in both schools. As a
462 result, pupils have little opportunity to experience meaningful learning and are instead expected to
463 reproduce knowledge already known by the teachers, albeit from different angles: with an
464 emphasis on cooperation and social competence in the new middle school (school A) and with an
465 emphasis on performance and individual success in the grammar school (school B).

466 Learning is subject to a high level of uncertainty both with regard to the process itself and to
467 the outcome on the part of the pupils. Teachers therefore seem to try to remain on the safe side.
468 They seek to achieve certainty by controlling processes and not straying from their planned course,
469 which is usually a narrow one with only limited options – especially when compared with the level
470 of diversity in the pupils and their ideas.

471 If we take the aims of the ILE project as laid out by the OECD (2009, 2013b) and contrast
472 them with the final results, it becomes evident that a positive transformation of teaching and
473 learning practices has not yet taken place in the two schools studied more closely, at least not to the
474 extent suggested by the first impressions the schools made. Although they have attempted to install
475 learning environments which could be classed as innovative according to the OECD criteria, these
476 innovations have had no clear impact on *how* learning takes place, since subjectively meaningful
477 learning processes are not encouraged and traditional patterns of learning continue to dominate in
478 the lessons, even if under the surface and not easily discernible. The underlying structures are
479 obviously still too deeply seated in the minds and actions of the actors (both teachers and pupils) as
480 to make the learning environments truly ‘learning driven’ in the way it was proclaimed in the
481 OECD project. The proclaimed transformation has so far only been superficial – and clearly still
482 needs time.

483 **Notes**

484 [1] For a more detailed description of the Austrian research project see Schritteser et al (2011).

485 [2] In stimulated recalls, researchers replay a videotaped lesson to a teacher who is asked to recall (and
486 comment freely on) the thought processes in the taped teaching situation. For further information
487 see Calderhead (1981).

- 488 [3] The vast majority of texts about the documentary method are in German. However, for the purposes
489 of this article, we have drawn on two texts written in English by Ralph Bohnsack (2010) and Arnd-
490 Michael Nohl (2010).
- 491 [4] In the English publication authorised by Bohnsack (2010), the term ‘frame of orientation’ is used
492 synonymously with the term ‘pattern of orientation’. However, in more recent and in German
493 written publications, Bohnsack distinguishes between two forms of ‘patterns of orientation’:
494 ‘schemes of orientation’ to refer to *what* has been said and ‘frames of orientation’ to refer to the
495 generic principle which produces practice (the *how*). See Bohnsack (2012).

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