Chapter 9

Collaborative Curriculum Development in Teacher Design Teams

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Introduction

School-Based and School-Wide Curriculum Reform

The reform literature provides many motives for planning reform in a school-based and school-wide manner. The school-based line of reasoning calls for a central role for and commitment by teachers and other practitioners in the reforming of teaching practice (Clandinin & Connelly, 1992; Skilbeck, 1998). As curriculum reform is highly dependent on the teachers who will eventually realize it, they must be engaged in the reform process. The teachers are also the ones with intimate knowledge of everyday practice and the needs of their students. This knowledge is crucial for the realization and success of any reform.

The school-wide line of reasoning is more concentrated on strengthening reform by making it a shared practice across the school (Grossman, Wineburg, & Woolworth, 2001; Hord, 2004), and in doing so, realizing sustainable, significant, and coherent educational reform in schools and between the teachers. The school-wide approach is essential for transforming reform from an incidental and isolated process in one part of the school, towards being a sustainable and coherent change for the whole school. The proponents of the school-wide approach state that many innovation plans fail at an early stage, and when an attempt does succeed, it is often an isolated effort by a few teachers embracing a reform. In the long run, most curriculum innovations and projects that rely on individual teachers' voluntary commitments do not last (Hargreaves, 2003). Therefore, there is a need to organize reform in a school-wide manner in which all teachers are somehow involved.

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An implication of the change in orientation (aiming at coherent and school-wide sustainable reform) is that there is a need for synergy and productive relationships at various levels (system, school, and classroom) between curriculum development, professional development of teachers, and school development. This synergy of processes is key for sustainable reform (cf. Fullan, 2007; Hopkins, 2001). Curriculum development and reform can be seen as the central elements of this trio as they touch directly on the learning of students, the daily work of teachers and their interaction with the students, and the way learning is organized in the school as a whole. Policy reform in Dutch lower secondary education is specifically aimed at changes in schools' curriculum. However, as curriculum reform, teacher development, and school development interact, all of them must be addressed. This puts the teachers at the forefront of curriculum improvement as they are central agents in all of these areas of development. As it is, teachers have a central role as curriculum makers of their school-based curriculum (Clandinin & Connelly, 1992; Skilbeck, 1998). Additionally, focusing on improving the curriculum is also intrinsically motivating to teachers. In contrast to broader organizational issues that are not always perceived as relevant to their direct practice, planning the actual learning processes of their students in their own subject matter domain is appealing to them (cf. Black & Atkin, 1996; Grossman & Stodolsky, 1995). Moreover, Skilbeck (1998) argued that teacher participation in curriculum development potentially helps to improve the quality and relevance of what is taught and will strengthen teacher professionalism.

Educational reform processes in which a large group of teachers are actively involved that are focused on curriculum as a main driver of change in a school-wide context seems to be the advisable move forward. But realizing this kind of work is far from easy (as schools have reported) as it involves curriculum development activities in collaboration between teachers, the participants' learning process, and changes at the school level. Although these types of integral activities have already taken place in some schools on various levels, it is far from being a common phenomenon and only a few schools have experience with it. Moreover, schools that try this kind of work have reported many tensions concerning the work at the school level, and the relationship between the school level and the various teams of teachers within it. In view of its promise and growing popularity, the school-wide and school-based approach in Dutch school-reform practice forms the context in which this study was conducted.

Teacher Teams in Curriculum Reform

Insights from the reform literature support teacher collaboration in teams as a fruitful means for educational reform. The recent literature has maintained that teacher collaboration in the form of, for example, 'professional learning communities' is a

central element in achieving sustainable school reform (e.g., Hord, 2004; Lieberman & Miller, 2004; McLaughlin & Talbert, 2001, 2006). In fact, one of the problems of school reform is that most teachers teach alone in isolated classes without having (or taking) the opportunity to reflect together on their teaching practices, to introduce new perspectives, to discuss new ideas, to give each other feedback on improvement efforts, and to jointly develop new initiatives. Schools that aim at innovation thus need to organize teacher collaboration centered on their teaching practice (Little, 1990). Collaboration between teachers is expected to have an impact on practice. There is considerable research showing that collaborative teacher teams are beneficial for student learning, which is the bottom line of educational quality (Louis & Marks, 1998; McLaughlin & Talbert, 2006). Collaborative teams have the most impact on student achievement when the focus of the work shows a persistent link to student learning and the initiatives taken are directly related to curriculum and instruction (Sackney, Mitchell, & Walker, 2005; Vescio, Ross, & Adams, 2008). Grossman et al. (2001) went even further and suggested that teachers need common curriculum experience in their collaboration (either by teaching together or observing each other teaching) in order to achieve effective collaboration that influences students' achievement.

Teachers' participation in development processes and in implementing the curricular products in practice can also be beneficial for teacher learning. When designing their future practice, teachers build on their current practice and adapt it in relation to their needs and wishes. By piloting the design product and by reflecting on the experiences and results, teachers can become aware of the specific potentials and problems of the reform. Based on such systematic reflections, they will gain new insights for the design. This can lead to yet another cycle of design, evaluation, and reflection. This learning process is an important part of the curriculum reform and development process, because in many curriculum changes a shift in teacher beliefs, roles, and methods is essential (Fullan, 2007). Adding these arguments to the strength of the curriculum perspective in school reform discussed in the previous section leads to a strong argument to concentrate teacher collaboration in schools on curriculum planning.

Considering the potential and appearance of teacher teams that concentrate on curriculum (design), there are only a few clear guidelines as to how these teams should pursue their curriculum development task. Although there is much research on teacher communities and teacher collaboration in the context of the school (cf. Henze-Rietveld, 2006; Meirink, Meijer, & Verloop, 2007; Zwart, Wubbels, Bergen, & Bolhuis, 2007), the focus is mostly on the forming of communities and the teachers' learning process. Little research is available on the curriculum design processes of teacher teams within schools and the kind of activities and conditions that contribute to the success of such processes. Moreover, most research deals with the input and output of these kinds of collaborative teams and there is still little known about how these teams get off to a good start and are sustained in their design work (McLaughlin & Talbert, 2006).

School-Based and School-Wide Curriculum Reform in Lower Secondary Education in the Netherlands

During the early years of the twenty-first century a central element of the changes in lower secondary education in the Netherlands was school-based reforms. Schools were central in deciding on substantial elements of their reform. Influenced by this expanded autonomy, by 2007, 93% of all schools for lower secondary education were reported to be engaged in or about to start renewing their school-wide curriculum and school-wide organization, led by their own curriculum preferences and possibilities (Onderbouw-VO, 2008). Within this innovation trend there was great variety, with some schools choosing modest pedagogical changes in the existing subjects, others introducing interdisciplinary learning-projects, and some (newly opened) schools going as far as to radically give up the division of learning into subject areas by offering an alternative organization of the curriculum (Hendriks, 2004; Onderbouw-VO, 2007, 2008).

Many schools also approached their reform efforts from a school-wide perspective. In order to realize curricular coherence, they initiated reforms that concerned the whole breadth of the curriculum in the school. This meant a departure from the traditional and somewhat fragmented structure and work process of secondary education in The Netherlands. Until then, secondary schools had been mainly organized in vertical subject departments covering all grades (lower and higher secondary) which to a large extent functioned autonomously when setting their educational courses, with little substantive coordination with other departments.

Although these developments were evident in the Dutch context, schools encountered difficulties in engaging in these processes. The most noted difficulties were a lack of time and resources for work on the reforms (57%); negative attitude of teachers towards the reform (42%); and teachers' lack of knowledge and therefore difficulties in participation (27%). Another notable result was the reported differences experienced between what teachers aimed for and the more ambitious and far-reaching goals expressed by the school management (26%) (Onderbouw-VO, 2008). All of these hindering factors were keeping schools busy as they tried to realize the reforms in lower secondary education.

A strategy lower secondary schools in the Netherlands applied to realize curriculum reform was organizing teams of teachers who are responsible for specific curricular domains (for example, 'The Humanities' or 'Foreign languages'). In 2007, 59% of the schools reported that they had organized at least some of the reform efforts in the form of these teacher teams from adjacent subjects who were responsible for redesigning their common subjects or interdisciplinary learning-projects. By the year 2012, 87% of schools were expecting to work in this manner (Onderbouw-VO, 2008). This phenomenon was mainly driven by practical reasoning. First, these teams bridged the gap between the aspirations at the school-level on the one hand, and the aspirations and practice of individual teachers on the other. Working in teams can help teachers translate the school-level ambitions to concrete materials, lessons plans, and eventually to teaching. Having an active role in creating

the reform also enables the teachers to enact their own wishes and plans in the school curriculum. Second, the inclination for teacher cooperation was part of the drive for achieving coherence, which was central to the lower secondary reform. Schools and teachers were searching for ways to integrate parts of their curriculum and create fruitful connections between subject domains. This manner of realizing school-wide curriculum reform was a relatively new phenomenon in the Dutch educational policy field and called for further exploration.

The decentralized Dutch educational policy climate enabled schools and teacher teams to take an active part in curriculum development and therefore made extensive study of the work of the teams possible. The study reported in this chapter aimed at describing the development of such teacher teams (hereafter referred to as Teacher Design Teams), the type of curriculum design activities they undertake in this context, and ways to support their efforts.

Defining Teacher Design Teams

The main focus of this study was a specific form of teacher collaboration in curriculum design, the Teacher Design Team (TDT). A TDT is defined as a group of at least two teachers, from the same or related subjects, working together on a regular basis, with the goal to (re)design and enact (a part of) their common curriculum (Handelzalts, 2009).

The defining characteristic of a TDT is its specific and central design task; the main goal of TDTs is to (re)design their common curriculum. The teachers' teams usually described in literature (i.e., professional learning communities, communities of practice) mostly focus on improving their teaching process through the professional development of the teachers. In the case of the TDT, the goals of professional development or building of cohesion in the staff are seen as secondary to the main design goal. These secondary goals play a role in the work of the TDT, but are seen as contributing factors to realizing a better curricular product. In some instances a TDT can also be seen as a professional learning community, but that is not necessarily the case.

Another central element of the TDT is collaboration of several teachers concerned with (re)designing their curriculum. Such collaboration effort is seen as a crucial factor for sustainable change that is effective at the student level (McLaughlin & Talbert, 2006). The characteristic of involving related subjects, in this respect, emphasizes the fact that teachers need to have some common ground on which they collaborate. The extent of the relationship can vary according to the perceptions of the teachers in the specific context. They are the ones considering this, and if they can see a relationship with another subject (for example, between geography and history), then these are considered 'related subjects'. This characteristic is related to the research context, the reform in the Dutch lower secondary education. A large part of the reform is aimed at creating more connections between different subjects in order to create more coherence in the curriculum. Finally, TDTs develop their

common future practice and enact upon it. This emphasis separates TDTs from teachers' teams that develop curricula but not for their own use (such as, for example, teachers participating in the development of learning materials with publishers). Collaboration in design of materials that the teachers themselves will use, and that will therefore affect their practice directly, raises their stakes in the process and the ownership of the product. This is also in line with a central tenet of this study: reform efforts have greater effect when they are school-based.

A TDT is an ad hoc functional unit, meaning that it is not an organizational entity on its own, but rather a description of how a team of teachers functions within a time frame. For example, a subject department at a school can, during a certain period, function as a TDT when they consciously redesign their common curriculum. As soon as this task is no longer central in their work, they will not be considered as a TDT anymore.

The focus in this study is specifically on teams in their first year of co-operation, as it seems that patterns of collaboration in design and design-related decisions tend to be formed in the initial stages of the work. These patterns are then perpetuated during the rest of the design process. According to Romme and Endenburg (2006), early choices and notions create boundaries around subsequent stages in the development. The design process can be divided into 'fluid' and 'crystallized' states. During the fluid state the problem and its solution strategy are still open to many directions. Once it is crystallized, the ability to revise key elements of the design without incurring extra costs (monetary or otherwise) is greatly reduced.

Research Questions

This study started from the premise that teacher collaboration in curriculum development is well-placed in order to bridge the gap between school-level curriculum reform and classroom-level practices. As teachers are at the forefront of all educational reforms, they need not only to be involved in the implementation process, but also to be active participants in the development process of the reform. It is assumed that collaboration between teachers in these curriculum development efforts enables (1) more coherent curriculum development across teachers and subjects, (2) teacher professional development, and (3) development of the school organization as a whole.

This study intended to contribute to this knowledge base by studying TDTs in their first year of development work. The main research question guiding this study was as follows:

What are conducive (or hindering) approaches and conditions for collaborative curriculum development by teacher design teams in view of school-wide reform?

This research question was further divided into three sub-questions: the first aimed at describing the work of teacher design teams, the second concerned those activities that were specifically conducive or hindering to the teams in striving towards their goal of a common curriculum, and the third aimed at exploring the school conditions that promoted or hampered these efforts.

Method

Collaborative curriculum design takes place within the context of schools. Therefore this study was conducted as multiple case study research. According to Yin (2003), case study research is suitable specifically when the borders between a phenomenon and its context cannot be clearly drawn. The focus of the research was on the teacher teams, who formed the cases in redesigning their common curriculum. Each case was built around one of the teams followed in the study. The cases included the activities and development in the team during this redesign, the organizational conditions that they were confronted with, and their interaction with their professional environment during the course of the reform.

Twelve teacher design teams in two different schools (seven teams in one school and five teams in another school) were followed during their first year of collaboration, the preparation year. The choice was made of teams that are neither very early nor very late adopters of new practices. Teams were not experiencing very extreme circumstances (such as very bad collegial relationships), as such teams will present other challenges.

During this first year, many of the TDTs' activities were documented, teachers were interviewed and observed, both at the start and at the end of the study, and (curriculum) documents produced by the TDTs were collected and analyzed. Based on the data, a rich description of the teams' work was obtained. This systematic documentation process and the perspective of the practitioners formed the basis for identifying activities and conditions that had a special (positive or negative) function for the teams. The analysis of the findings, based on the three sub-questions guiding this study, was done on three levels: (1) an analysis of the individual cases (the teams), resulting in detailed case descriptions; (2) a cross-case analysis of the teams in each of the schools to find common and divergent patterns per school; (3) a cross-study analysis, comparing the findings from the two school sites to detect commonalities and differences between the school sites. By choosing these schools and teams carefully and by comparing the findings with other studies, some analytic generalization can be made to TDTs in other contexts.

Main Findings

How TDTs Addressed and Carried Out Their Development Work

With regard to the work of the TDTs, it became obvious that it was neither explicitly planned nor organized by any player in the process (in most cases, not even by the external coaches). Teams most often proceeded from one meeting to the next tackling issues as they arose. This implied that only a (small) portion of their curriculum materials were ready at the end of the preparation year for almost all the teams. Role division in most teams was informal and not all teachers participated to the same

extent in the curriculum development activities. Most of the joint work was concentrated on developing general design decisions. There was little joint work on constructing concrete teaching and learning materials. On those occasions where collaboration on constructing concrete materials level did occur, this led to realizing more significant changes in the team's curriculum.

In the first phase of their work, teams were very much oriented towards the future 'time' and 'place' components of their curriculum. These issues needed to be somewhat clarified before the team was open to discussing more fundamental curricular questions such as 'content', 'teaching activities', and 'materials'. The major design decisions that teams made in their curriculum development process were done either during the first several meetings of the TDTs or even prior to the commencement of the formal process in school (teams that had already some common plans and had not yet had the chance to realize them took the opportunities provided by the reform process). This underlines the importance of this initial phase.

The overall process of the teams included only a few of the 'ideal' steps in curriculum development. While analysis activities were somewhat apparent (mainly oriented towards the organizational aspects), design and construction seemed to occur most often simultaneously. TDTs spent little time on the issues of 'rationale' and 'goals'. These issues rarely come up in an unprompted discussion. Even when a coach introduced those issues, teachers found this discussion difficult and abstract. Teams conducted little to no explicit evaluation activity and judged the quality of their plans and materials mainly on the basis of their practicality.

The teachers' main substantive consideration in the development of their curricula was the content that should be taught. Content was then defined as what the textbooks contain. This was, however, not a critical discussion of content selection but more an issue of content coverage. Cross-curricular teams were the only teams in which content was more critically discussed.

TDTs displayed a clear pattern in which general design discussions were conducted together, whereas construction of materials was an individual exercise done at home with little feedback between the team members. The teams experienced working individually on the construction of teaching materials as one of the most efficient parts of the work, as it was related to a feeling of real progress in their work. Joint work seemed limited to general issues and design statements.

Conducive or Hindering Activities

The most conducive activities were those that assisted in creating a visualization of the future practice of the reformed curriculum. The activities (such as piloting, school visits, and discussion of blueprints of design) were highly valued by the teachers and led to pattern changes in the teams' process.

Teams with a clear common reform ambition and a positive disposition towards the reform started more rapidly with their design and were less dependent on the clarity of the reform. Teams with vague reform ambitions and ambivalence towards

the reform needed sufficient clarity about the organizational conditions of their future practice before starting to work on their concrete plans. For these latter teams, this led either to a long analysis and orientation phase followed by a brief design phase or to a long period of inactivity followed by a brief burst of design and construction activities. These activities then were mainly aimed at adjusting former curricula to the organizational conditions of the school reform.

On the whole, it seems that the teams that shared clear initial ambitions often realized explicit incorporation of the school-wide reform goals in their products. Teams that decided to keep their former textbooks and to use them as part of their reform chose in general to continue their existing teaching approach with little change. Thus, this might be considered a hindering approach, as it meant that they often did not even reconsider their former practice.

Teams with vague or no common ambition showed a greater dependency on the level of clarity of the reform. These teams made, on the whole, less progress in the production of new curriculum plans and materials. When the school-wide process was more structured, this lack of clarity had less impact on the pace of the work of the teams. In both schools, the school-wide process gave only few organized opportunities for interaction between TDTs. However, teachers often expressed a need for such opportunities and when such activities did take place, they had a strong impact on the teams. These kinds of activities gave teams an overview of the developments at the school level. It also supported the commitment of the teachers to the process, as it strengthened the impression of a shared endeavor and identification with the work of other teams in the same school.

Conditions at School Level

Much of the TDTs' work was accomplished during a brief period of time in which the teams met on a regular basis, during which they made the most progress. However, this is not the dominant pattern of work, as TDTs seemed to meet irregularly. A centrally scheduled regular meeting roster and allocated time are necessary but not sufficient for enabling meetings.

The perceived effectiveness of coaching was dependent on the ability of the coach to cater to the main needs of the TDT, especially in creating or providing concrete tangible teaching materials. The presence of a coach also had a crucial role in triggering team meetings by making concrete appointments and suggesting discussion issues.

In both school sites followed in this study the work of the TDT was the responsibility of a member of the school management team. In one case it was the innovation manager, in the other the school section leaders. Findings showed little differentiation in the manner in which these school leaders approached the different teams, while the teams showed great variation in their work. The school leaders had only a vague overview of the progress of the TDTs, as there was little interaction with the teams concerning their work. The importance of this issue was demonstrated when

the school management did actively inquire about the development of the TDTs' work. This single incident had a positive impact, leading to increased curriculum development activity and materials construction by the TDTs. It supplied teams with information and had a relational function. All teams found the interest and time investment of the leader important.

Overall Conclusions

Taking into account the findings along with the insights from other studies, several conclusions can be drawn. These conclusions are related partly to how TDTs go about the process of curriculum development and partly to the activities and conditions that seem to be conducive for their work.

The Process of Curriculum Development

TDTs display a great variation of activities and experiences within a similar reform context (see also Voncken, Derriks, & Ledoux, 2007). In large part, these variations can be accounted for by the characteristics of the teams and their interaction with the school-wide reform.

Teams with a clearer common reform ambition and a more positive disposition towards the school-wide reform started more rapidly with the design and rethinking of their curriculum. Teams that started off with a more vague reform ambition needed sufficient clarity about the organizational conditions before starting to work on their concrete plans. Therefore, we may conclude that the design process of the TDTs is influenced by characteristics of the design team and in addition to the clarity of the initial reform ambition.

The TDTs' work process on the whole was neither explicitly planned nor structured. Irrespective of the context and support, TDTs' work seemed to advance from one meeting to the next without a clear overview of goals or structure. Teams required one of two kinds of triggers initiating a meeting. The first kind of trigger came from outside the team. This kind of trigger comes in the form of a coach or a school leader. When teams have an external coach, the fact that the coach makes an appointment to come and suggest discussion issues is enough to trigger a meeting. Alternatively, when the school or school-section leaders give the TDT a concrete assignment or summons a meeting, this too has the same effect. The second kind of trigger was the internal trigger. This kind of trigger comes from within the team and leads not only to holding a single meeting, but also to regular meetings. This trigger has two possible sources. In some teams, when teachers concluded a meeting with concrete decisions and appointments, this led to a following meeting based on these decisions. This was not a common practice for TDTs in this study. The other internal trigger is a sense of urgency felt by the teachers. This arose mostly at the end of

the preparation year when teams needed to complete some form of teaching materials. This led to a burst of activities in TDTs. This urgency can lead to the team reverting to older and less ambitious plans than those they had developed. However, the more that team teachers own the development process the less need there is for an external trigger for the work of the teams.

TDTs had a clear pattern in which general design discussions were conducted together whereas construction of materials was an individual exercise done at home with little feedback between the team members. Joint work seemed limited to general issues and design statements. However, there are indications that cooperating on the concrete materials is most effective for arriving at curriculum materials that are more in line with the reform ambitions and represent a significant change from former practice. The findings by Voncken et al. (2007) also support the potential of cooperating on materials as an instrument for development of reform and the learning of teachers in the reform. They went even further and concluded that cooperation in teaching activities and undertaking new experiences together can be even more powerful.

Conducive Activities and Conditions

A first type of conducive activities share the characteristic of helping teachers to envision their possible future practice. As was apparent in the discussion about the development process, TDTs have a great need an operational image of the conditions in which their teaching would take place. This guides much of their work. Activities that contribute to this are conducive to the process by helping the teams move further, make design decisions, and come closer to creating a common curriculum. This relates to a variety of activities that also depend on the need of the specific TDT during a specific time. In this context, pilots or implementation of (part of) the materials have a positive effect on the teachers during the process. This gives teachers a concrete image of how students interact with the materials. A similar function can be achieved by taking field trips to schools implementing a similar reform or facing similar challenges. As already noted, the limitation of pilots is that they often seem to concentrate on the practicality of the plans and not on their effectiveness or validity, and their impact is also limited to those teachers that directly participate in the pilots. Possibly, setting a clear evaluative goal ahead of time and making it a team-wide endeavor can make pilots an even more effective instrument.

A second type of conducive activities is the discussion of concrete plans or products. These design attributes make the discussion concrete and focused. Abstract ideas are set on paper and that makes them tangible and accessible for discussion. Besides structuring the discussion, this broadens its scope, as teachers must consider all the implications of their decisions in the concrete. This finding is supported by Ametller, Leach and Scott (2007), who experimented with design attributes in

the course of reform. According to them, these attributes make design explicit and also enable communication between teachers and designer.

A third type of conducive activities is explicit information on the school-wide reform ambitions. Specifically, schools or school section leaders that interact with the team in a direct manner during a meeting are seen as having significant potential for helping the team make progress. They can supply new information, help review the decisions already made at the school level, and hear ongoing questions.

A fourth type of conducive activities aim to tackle the apparent absence of informal interaction of teachers with members of other TDTs on issues related to the reform, which calls for some structured instruments. Two specific types of activities seem effective: presentations of teams' progress and concentrated schooling about relevant reform themes. First, the presentations of the teams' progress give other teams an overview of their development. It gives them insight into how far along other teams are, what problems they encountered, how they solved them, and what kinds of considerations other teams take into account in their work. This is information teams can use and do use for their own work. The presentations also have a relational function. Hearing how others struggle with and solve problems shows teachers and teams that they are in a sense 'not alone' in the process. This seems quite obvious in a school-wide process, but teams tend to see their problems as unique. Creating a bridging function can help teams see other developments. The second type of activity, study days, is aimed at providing clarity about the school-wide reform focus. Teachers often need additional information on different aspects. A crucial characteristic in making these study days effective and appreciated is their practical orientation. Such study days are only seen as relevant when they deliver concrete products that teams can easily apply in their development work, such as a framework for their work process and a framework for describing their curriculum materials. When study days fail to meet this criterion, they have little explicit effect on the development process.

Discussion

The study discussed in this chapter was originally carried out in 2004–2006. The concept of Teacher Design Teams was relatively new and this study was one of the first that discussed empirical characteristics of these teams. In this discussion we briefly discuss some new insights and research that is related to teacher design teams.

In contrast to many curriculum development models, the development process by the type of teacher design teams in this study does not begin by conducting analysis aiming to produce guidelines for design. Analysis activities, when executed, focus on organizational conditions regarding their future practice. In all teams the major design decisions, as reflected in their curricular products, are made very early in the process. Even when teams do not make conscious, 'formal', design decisions, the ideas discussed in the first meetings become the design, without their

being critically examined for their merit. This confirms the assertion that design decisions tend to rapidly crystallize after the initial development phase (Romme & Endenburgs, 2006).

The teams had great difficulty managing vagueness of the curriculum reform. This seems similar to the instrumentality element of the practicality ethic of teachers (Doyle & Ponder, 1978). Teachers tend to focus on procedural elements of the reform at the cost of discussions on more substantive principles (cf. Jonker, Gijzen, März, & Voogt, 2017). This issue was also evident in the fact that teams regarded practicality of the plans and materials as the main quality criteria for their products.

A difference in the development process is apparent between the two types of teams (differing mainly in having or lacking a common initial ambition). Teams that start the process with little direction, and are 'held back' in exploring organizational conditions, get very little construction done during the preparation year. They combine the design and construction phases mostly at the end of the year and often recreate their former curriculum in the new school framework. Teams with clearer ambitions display somewhat more distinct design and construction phases. Construction mostly takes part at the end of the preparation year, under a great deal of pressure. The more structure there is, the more construction gets done.

TDTs are not inclined to initiate evaluation activities of any sort. Piloting of part of their curriculum materials is the only activity that somewhat resembles an evaluation. However, the guiding perspective of the pilots is that of practicality. Other issues of quality (such as validity and effectiveness) are hardly discussed, if at all. The lessons learned from the pilots are also limited to the participating teachers (often only one or two from the team). There is little transfer of the conclusions to teachers not directly involved in the pilot.

As the study presented limited itself to the preparation year, few significant implementation activities were documented. Findings from other research (Huizinga, 2014) do point to the potential catalytic effect of implementation. During implementation, teachers come across issues they did not foresee or activities that turn out other than expected. This can be a powerful instrument to elicit more evaluation activities. These evaluation activities need some support in order to make them constructive and transcend organizational issues. Stressing the importance of evaluation activities, Visscher and Witziers (2004) pleaded for concentrating teams' work on the evaluation of their practice, as this underlines the strong connection between the teaching process and the learning results. In a 'data-team approach' the analysis and compilation of data on the effectiveness of (parts of) the school are the starting point and central thrust of the team's work (Schildkamp & Kuiper, 2010). In conclusion, implementation, analysis and evaluation activities were not an inherent part of the development process of TDTs in this study. Design and construction were highly interrelated and more often executed as an integrated activity.

Findings of this study concerning the role fulfilled by the school management and the function of the TDTs lead to insights about the role that the relevant school leaders could and should fulfill. It seems then advisable that the school management apply a differentiated approach to teams, based on the teams' characteristics and the develop-

ment that they show. Certainly when a flexible and developing reform strategy is applied with teams that have a vague reform ambition, a more proactive and involved role for the school management is called for. This conclusion is in line with both Nieveen and Handelzalts (2006) and Voncken et al. (2007).

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