

THE VOICE OF CURRICULUM DEVELOPERS IN TEACHER GUIDES

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In a short but interesting passage in his ground-breaking book *The Practice of Everyday Life* Michel de Certeau (1984) introduces two figures, the Expert and the Philosopher:

Both have the task of mediating between society and a body of knowledge, the first insofar as he introduces his specialty into a wider and more complex arena of socio-political decision, the second insofar as he re-establishes the relevance of general questions to a particular technique (mathematics, logic, psychiatry, history, etc.). In the Expert, competence is transmuted into social authority; in the Philosopher, ordinary questions become a skeptical principle in a technical field (pp. 6-7).

We will extend the dichotomization between *introducing a specialty and introducing skeptical principles* to the field of the teaching profession or, more specifically, to the relationship between curriculum development and the teaching profession. The curriculum developer [1] can be considered a specialist, meaning that she has field specific knowledge that, for example, might involve task construction, activity sequencing, and concept formation. The curriculum material can then be seen as a tool for the developer to mediate between her specialist field and teaching practice. Teaching, however, is also a profession, not only a practice. A professional teacher is not only supposed to use the tools of the trade, follow laws and regulations, and adapt to guidelines but also to adapt to her students, reflect on her practice, work with colleagues, and further her competence over time. The curriculum developer, in addition to developing and authoring textbooks, also typically designs and writes an accompanying teacher guide, which is what we are concerned with here. Using examples from teacher guides, we will discuss the relationship between the developer and the teacher, the intended reader of the guide.

The teacher can in practice use the teacher guide in very different ways. A central idea in de Certeau's book is that a user of a product can always find tactical ways of using it differently than intended by the producer. However, teachers' actual use of teacher guides is not what we focus on here. Instead, we look at the options of the curriculum developer and ask two questions:

Does the developer act as an Expert and in the teacher guide talk *through* the teacher and exercise her authority as an Expert to persuade the teacher to use the textbook and its tasks in accordance with the developer's intentions?

Or does the developer take the Philosopher stance and, through skeptical questioning concerning the relation-

ship of instruction and task, help the teacher reflect on the tasks, why they are constructed as they are, and what their relationship with teacher practice and with the classroom situation is?

In extreme form, the Expert stance would lead to some version of what is sometimes called the teacher-proof curriculum. The Philosopher stance would, at its logical limit, imply a form of professional development rather than curriculum material.

A way to understand the Expert/Philosopher distinction is to think of the teacher guide as a carrier of pedagogical ideas concerning the teaching and learning of mathematics. The Philosopher stance implies that the teacher is afforded agency over these ideas in the sense of being asked to deliberate on them in relation to her own practice. The Expert stance implies that the teacher is instead instructed to faithfully use these ideas in practice. Our question is not about the quality of the pedagogical ideas; rather, it concerns authority and agency in relation to these ideas.

Obviously, we cannot know the actual intentions or ideas of those who developed and have authored the teacher guides, just as we cannot know for sure how a teacher will perceive them. We will instead look at the text as an objectively given structure and discuss the *voice of the text* and how this voice relates to the teacher and relates the teacher to the ideas in the text. In doing this, we build on similar work done on mathematics textbooks. When applying these ideas to teacher guides we also transfer most of the methodology that builds on Halliday's (1973) linguistic theory. As a basis for this discussion, we use examples from Swedish mathematics teacher guides for lower secondary schools.

Voice in mathematics texts

Several researchers have previously examined how curriculum materials, in general, position the reader in relation to the mathematical content. Herbel-Eisenmann (2007) studied how mathematics textbooks position the reader by investigating language construction as an expression of the textbook's voice. Voice is a metaphor for the relationships between authors/speakers and readers/listeners and a voice analysis is guided by the question "Who is speaking?" By building on Halliday's theories, Herbel-Eisenmann investigated the voice in a standards-based middle school curriculum and found that the textbook was devoid of first-person pronouns, indicating that the authorial presence of human beings is concealed. Further, she found a range of exclusive imperatives (e.g., 'write', 'draw') in experiments and problems directed the students' activity through the use of commands, positioning the student as a 'scribbler',

i.e., someone who does mathematics according to scripted instructions from the authority, represented by the textbook. Herbel-Eisenmann and Wagner (2007) investigated how a text might position students in relation to mathematics. In both of the textbooks they investigated, first person pronouns were entirely absent. Further, they point out that this absence of 'I' and 'we' need not be so. "Just as mathematics is about the moves from the particular to general and back again, we see mathematisation as the moves between the personal and impersonal, between context and abstraction. Mathematics lives in this tension" (p. 13). When concluding, they "draw awareness to the dance of agency between particular persons [...] and the apparently abstract, static discipline of mathematics" (p. 13). Here, they build on Pickering's (1995) work on agency, which in turn has its roots in Latour's agent network theory developed in the 1980s, where agency is not only ascribed to humans but also to material objects or contexts/practices (see Latour, 2005, for a retrospective summary). In particular, a discipline can come with its own agency and so can a text. As Pickering explains, when Latour speaks of the agency of a text, it is not shorthand for the agency of the author of the text, it is the agency of the semiotic representation itself.

The way in which a text positions the reader has also been discussed in the case when the teacher, rather than the student, is the assumed reader. Remillard (2012) discusses curriculum resources in terms of the notions speaking *to* and talking *through* the teacher.

Despite the invisibility of the authors, curriculum resources have a voice that is manifested through the way they communicate with the teacher. Most curriculum resources place primary emphasis on what the teacher should do. I think of this as talking through teachers (Remillard, 2000). That is, the authors communicate their intent *through* the actions they suggest the teacher takes. Few resources speak *to* the teacher by communicating with teachers about the central ideas in the curriculum. (p. 112)

Remillard does not define these notions further, but it is in line with her observations that we introduce the Expert/Philosopher distinction from de Certeau. The Philosopher voice extends the idea of speaking *to* and is taken to mean that the material speaks to the teacher as a person with agency in relation to the pedagogical ideas concerning the teaching and learning of mathematics encompassed in the teacher guide, rather than affording material agency to the teacher guide or the associated textbook. The Expert voice denotes a text that still speaks *to* the teacher as a person, but no longer speaks to the teacher as a person with agency. The Expert voice, constrains teacher agency and instead emphasizes the material agency of the teacher guide or the associated textbook.

To operationalize the distinction of Expert and Philosopher voice, we apply linguistic methods, drawing on Halliday's discursive framework, previously used by Herbel-Eisenmann to examine the voice of mathematics textbooks. In the case of teacher guides, the reader is now distinctively a teacher, not a student. But more importantly, what is of interest to us is the pedagogical ideas concerning the teaching and learning of

mathematics, rather than the mathematical ideas. Therefore, when transferring the linguistic methods to the case of teacher guides, the methodological details that concern the content need adjustment.

Detecting the voice of the Expert or the Philosopher

Following Herbel-Eisenmann, in our analysis we use the interpersonal, ideational, and textual functions from Halliday's functional grammar, with a main focus on the interpersonal function. But the other two functions also add to the picture. The ideational function concerns the content of the text. In our case, the pedagogical ideas about mathematics teaching and learning make up the relevant ideational component. The term *ideas* should here be interpreted broadly and include presentations of tasks, information about prerequisites, discussion about mathematical concepts and their representations, and so on. We will look at how the teacher is afforded agency in relation to such ideas. The curriculum developer can only have general ideas about the teacher's knowledge and skills and her participation in particular teaching practices. By letting the voice of the teacher guide invite the teacher to consider the pedagogical ideas in relation to her own knowledge, skills, students, and practice, the voice represents a Philosopher stance. If the voice in the teacher guide instead affords agency to the textbook, presents information about students without asking the teacher to relate to her own students, or instructs the teacher to present mathematical information without considering how this may relate to her previous work or to the experience of her students, the voice in the teacher guide represents an Expert stance.

The textual function concerns the thematic and cohesive structures of the text and we will only touch briefly upon how this affects the voice in our examples by remarking on how the general layout of the teacher guides influence the voice.

The interpersonal function mediates the relationship between the speaker and the audience—the participants of communication—and how their identities are constructed through the text. The interpersonal function is central because it mediates power and authority relationships established in the text and also reveals "to what extent are participants identified as specialists?" (Morgan, 2006, p. 229). Three linguistic forms are examined: *imperatives*, *personal pronouns*, and *modality*. Imperatives or commands (*e.g.*, 'show', 'explain', 'consider') can be either exclusive or inclusive. Exclusive imperatives are instructions to carry out specific activities ('show', 'explain'). Inclusive imperatives ('consider'), on the other hand, invite the reader to adapt some specifically argued conviction about an item, affording agency to the reader to design and carry out the specific activity. Two types of personal pronouns are important to the construction of the interpersonal function in the text. The first person pronouns 'I' and 'we' indicate the author's presence in the activity portrayed in the text (Morgan, 1996). They can also be used to include the reader in the discussion by referring to earlier parts of the text, *e.g.*, "In section x we saw that..." The second-person pronoun 'you' addresses the reader directly, speaking *to* the reader. Modality of the text refers to the use of modal auxiliary verbs (*e.g.*,

‘must’, ‘will’, ‘could’; adverbs such as ‘certainly’, ‘possibly’; or adjectives, *e.g.*, “I am *sure* that...”). Modality is often expressed through hedges, which are linguistic pointers to moments of uncertainty (*e.g.*, “It might be the case that...”, “I think...”) (Herbel-Eisenmann, 2007; Herbel-Eisenmann & Wagner, 2007; Rowland, 2000).

Language manifests the voice of a written text. The use of imperatives, together with the use of personal pronouns and modality, positions the teacher and reveals whether the teacher guide speaks *to* or talks *through* the teacher. The curriculum developers’ use of inclusive imperatives and personal pronouns directly addressing the teacher, as well as hedging expressing uncertainty, are categorized as speaking *to* the teacher with the Philosopher voice. On the contrary, the Expert voice, talking *through*, is identified by the use of exclusive imperatives (*e.g.*, ‘write’), together with the absence of first-person pronouns or pronouns directly addressing the teacher. Also, modal expressions of certainty, such as ‘must’ (Wagner, 2012), afford all agencies to the author and are categorized as indicators of talking *through* the teacher.

Examples of the Expert voice

The following examples of curriculum developer voices are from Swedish lower-secondary-school teacher guides. The analysis was conducted on the original Swedish text. We recognize the difficulty of ensuring a good translation between languages and in the translated excerpts below we have carefully paid attention to linguistic nuances that might be lost in translation.

Although we are not focusing on the textual function, it is worth noticing that the texts follow a certain thematic structure. For every two pages in the student’s textbook, there is a comment in the teacher guide about the content in those two textbook pages. We interpret this structure as the voice affording agency to the textbook’s progression, indicating that the teacher’s role is to follow the textbook rather than, for example, use her own planning of the mathematics course. We see this as an example of Expert voice, expressed by means of the textual function.

In what follows, we look at the interpersonal and ideational functions, starting with an excerpt that introduces the concept of similarity in the teacher guide for Grade 9.

The concept of similarity is new to the students, even though they have already worked with similar shapes. Drawings and maps are examples of similarity, like enlargements of pictures of insects, for example. In this section, the students meet equations with two denominators for the first time. How to solve such equations? Preferably, start with an easier equation, for example: $3x + 2 = 14$. This equation has the solution $x = 4$. **Show** that one [2] gets an equation with the same solution if all terms in the equation are multiplied by, for example, 5. **We** get the equation $15x + 10 = 70$. **We** see that the solution to the equation does not change if all terms in the equation are multiplied by the same number. **Show** how to do this with an equation of the type

$$\frac{x}{3} = \frac{7}{10}$$

The least common denominator for 3 and 10 is 30. **We** multiply by 30 on both the left and right side of the equation, and get an equation with the same solution as the original equation. **We** get

$$\frac{30 \cdot x}{3} = \frac{30 \cdot 7}{10}$$

After simplifying, we get $10x = 37$, which is the same as if **we** had cross-multiplied. Some of the equations have a numerator and denominator consisting of two terms. It is important to remember that there are invisible brackets around these terms. These brackets must be added before cross-multiplying. (Undvall, Johnson & Welén, 2013, p. 38; our translation and bold)

While the use of ‘we’ in several instances above invites the teacher to take part in the mathematics, the pedagogical matters of the text concern the sequencing of the equations, which is written as an explicit script for the teacher. The exclusive imperative ‘**show**’ initiates the different steps in this script and no personal pronouns address the teacher directly in relation to this script, nor any inclusive imperatives or modality (interpersonal function). We consider the writing to be an example of talking *through* the teacher, by instructing him/her to carry out a mathematical procedure devised by the curriculum developer.

The first line, “The concept of similarity is new to the students ...” (as well as the remark about equations with two denominators) concerns what the students might know about a particular concept, which is an ideational aspect. We can assume that the meaning of this is that the textbook has not previously treated similarity. But then, the concept would only be new to the students under the assumption that the teacher follows the textbook without deviation. It is possible that a teacher might have discussed similarity with her students at an earlier point. Therefore, taking the novelty of similarity for granted is a way of affording agency to the textbook rather than to the teacher. Moreover, the teacher is not prompted to consider whether similarity is indeed new to her students. In this excerpt, the limited space for teacher agency, given by the interpersonal and the ideational functions, works towards giving the text the character of Expert voice.

Below, we show an example from the introduction to the concept of average speed in Grade 7.

In the section on average speed we do not write out any formulas. The tasks are chosen so that one can understand how to calculate, under the presumption that one understands the concept of average speed. In the red course [3], the students learn to write time in decimal form and to change from km/h to m/s and from m/s to km/h. (Carlsson, Hake & Öberg, 2011a, p. 42; our translation and bold)

Here the curriculum developer ideationally describes what is going on in the student’s textbook without directly addressing the teacher with personal pronouns. We interpret the initial ‘**we**’ as referring to the author team. There are no prompts or descriptions of any teacher involvement; the text lacks imperatives and modality related to any teacher action. Without inviting the teacher, the curriculum developer

provides a pedagogical description of the intended student interaction with the textbook. Consider the sentence, “The tasks are chosen so that one can understand how to calculate, under the presumption that one understands the concept of average speed.” Here ‘one’ refers to a student working with the book. A particular understanding is described as needed, but the teacher is not invited to consider whether this is the case for her students and act accordingly. This lack of agency affordance demonstrates an Expert voice.

We infer that the curriculum developer has a pedagogical idea of how the building of the concept of speed may be done. However, ideas are not elaborated for the teacher. The Expert voice in the phrasing actually leaves the teacher beyond the teaching situation.

Recognizing the above phrasing to be out of the scope of the notion of speaking *to* or talking *through*, we need to extend our conceptualization of curriculum developer voice. The language use in this excerpt is rather an example of curriculum developers talking *past* the teacher. The teacher becomes an observer of a scene in which all agency is afforded to the textbook [4].

Example of the Philosopher voice

In the following excerpt, the students are introduced to the concepts of proportion and proportionality in the teacher guide for Grade 8.

Here [*referring to specific pages in the student’s textbook*] it is shown that a connection can also be represented by a formula. It is good to **keep in mind** the different forms of representations at all times. Connections can be expressed with words, with a graph, with a table, or with a formula. The concept of proportionality is difficult and **often requires** several short lectures and different explanations for the children to understand it fully. Activity 4:2 gives more practice but requires some preparation. (Carlsson, Hake & Öberg, 2011b, pp. 89-90; our translation and bold)

The introductory sentence makes explicit that connections can be represented by formulas and that the discussed pages in the textbook contain exactly this. This, together with the second and third sentences, has an ideational function, making the teacher alert to the fact that connections can be represented in different forms. While the text does not feature personal pronouns, the language construction “it is good to keep in mind” is a modal expression with the inclusive imperative ‘**keep in mind**’ as a recommendation that speaks *to* the teacher. Obviously, the authors cannot know the teacher’s actual knowledge of alternative representations, but the sentence construction still appeals to this knowledge by asking the reader to keep it in mind but without giving explicit instructions about how to use this information. The voice in the text hence talks to the reader as a competent professional and affords agency to the teacher. Similarly, the concept of proportionality is difficult and that the concept might need several lectures is highlighted but leaves an assumed professional judgment by the teacher to consider the content and planning of such lectures.

In summary, the voice contains elements of speaking *to* the teacher, but more interestingly, the interpersonal and

ideational components function together to afford the teacher agency. The text relates to the textbook but offers additional pedagogical information that the teacher is asked to consider. We therefore consider this as an example of speaking with a Philosopher voice, mediating between knowledge in the teaching and learning of mathematical content on the one hand, and choices and alternatives for teaching practice on the other.

Discussion

On the level of the curriculum developer voice in teacher guides, we have found an example that is not classifiable as talking *through* or speaking *to*; we introduced the notion of talking *past* the teacher for cases of this kind. Here, the teacher guide did not talk *through* the teacher, describing preferred teacher actions without invitations to reflection; the curriculum developer instead talked *past* the teacher, by means of constructing a narrative involving only the student and the student’s textbook, without involving the teacher as a mediator. Linguistically, these text units are characterized by a total absence of personal pronouns and imperatives. We sense a scene where the teacher witnesses a learning situation from a distance. It seems as if the teacher guides provide teachers with information on the interaction between the textbooks and students, which actually excludes the teacher. This form of writing can be seen as positioning the teacher as an observer of what is going on in a classroom, where the textbook has agency over the classroom practice. In the Expert/Philosopher perspective, talking *past* the teacher would be a particularly clear case of an Expert stance. In addition to this quite extreme example, we also found other examples both of Expert stance and Philosopher stance.

Having established that Expert and Philosopher voices can be researched, we now turn to the question of whether the distinction is worthwhile in relation to established ways of discussing teacher guides and other curricular material. Several lines of previous research have pointed out that guides may serve the purpose of supporting teachers’ professional development. This has, for example, been described in terms of teacher guides being *educative* (Davis & Krajcik, 2005). Ball and Cohen (1996) discuss the issue in terms of intended and implemented curriculum and conclude that “rather than conceiving the curriculum as ‘something for students’ and the teacher’s guide as merely an instruction manual for teachers, both would have to be considered as terrain for teachers’ learning. This would require learning how to design and develop written materials so as to be educative for teachers as well as students” (p. 8). It is worth noticing that the term ‘educative’ encompasses an idea of the *material having an effect* on the teachers. In this sense, it gives a primacy to the curriculum developer over the teacher in deciding what should be offered for learning. We suggest that a teacher guide with educative purposes might in fact fail to offer the teacher increased agency over the teaching situation if the voice of the material does not invite the teacher to deliberate on the ideas in the material in relation to her own professional practice. Being a professional is typically characterized by using procedures, methods, and tools established in the profession but also, just as importantly, by reflecting on practice and make personal professional

judgement. An Expert voice will appeal to the first aspect of professionalism, while perhaps still being educative in particular instructional procedures or mathematical methods. A Philosopher voice would, regardless of whether talking about instructional procedures or pedagogical deliberations, appeal to the aspect of professional judgement and reflection. The terms ‘Philosopher’ and ‘Expert’ voice are mere metaphors, but we have used them to convey a distribution of agency in what we consider to be specialist fields.

We suggest that the methods we have used to analyze the voice could also be used when designing and writing teacher guides. If a choice is made to afford the teacher agency, this should be done by using the full power of language—using interpersonal, ideational, and textual functions. This might be worth considering not only when writing teacher guides but also, for example, when writing material for professional development.

Notes

[1] We will, in this paper, use the term ‘curriculum developer’ instead of, for example, calling the producer of the teacher guide ‘the author.’ The reason for this is that we want to emphasize curriculum development as a specialist field that involves particular knowledge and skills and that the actual authoring of the teacher guide is only one such skill.

[2] Translation is not an exact science and the Swedish pronoun *man* is here translated into ‘one.’ *Man* is quite peculiar in Swedish as it is highly impersonal. It denotes an unspecified imagined person or larger collective or community. The phrase “The burglar has not been identified” could, for example, be formulated as “[*Man*] has not identified the burglar”; but “One has not identified the burglar” would in English sound quite peculiar. “No one has identified...” would work, but would indicate *no individual*. But *man* in the original formulation rather refers to an unspecified collective, typically not including either the sender or the receiver of the phrase.

[3] The textbook series comprises a basic course called the ‘blue course’ and a more advanced course called the ‘red course.’

[4] We have earlier communicated the idea of speaking *past* the teacher in an oral communication on July 29 in TSG 38—Research on Resources (Textbooks, Learning Materials, etc.) at ICME-13 in Hamburg.

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The images in this issue were kindly provided by Michiel Veldhuis (pages 18, 24, 29 and front cover) and Marja van den Heuvel-Panhuizen (page 34 and this page), both of the Freudenthal Group at Utrecht University.