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Four Models of Language Learning and Acquisition and Their Methodological Implications for Textbook Design

Hermann Funk
(Hermann.Funk@uni-jena.de)
Friedrich-Schiller-Universität Jena, Germany

Abstract

This article explores the consequences of four models of language learning and acquisition on textbook design, and the sequencing and distribution of lesson activities. The model developed by Levelt (1989) to explain oral speech production, which was later extended to second language learning by De Bot (1992), points to the importance of lexical knowledge and subconscious, automatic processing. Paul Nation (2001) cited ample evidence for the effectiveness of an equal distribution of meaningful input, language focused instruction, meaningful output and fluency practice in his *four strands model*. Segalovitz and Gatbonton (2005) proposed the ACCESS-Model, an acronym that stands for *automatization in communicative context of essential speech segments*. Merrill Swain's *model of output hypothesis*, which insists that learners learn not only from input but also from output and thus pushes for learner output at an early stage, has also been the subject of much discussion. As far as I can see, none of these four models have been sufficiently reflected in terms of their consequences for textbook sequences or task and exercise design. Based on practical examples of tasks and exercises, this article will put forward a few ideas and suggestions based on these models and try to come to some general conclusions with regard to a research-based textbook design.

1 Introduction

The history of language teaching has seen a number of macro-methodological approaches which have had an impact on textbook designs. In the history of language learning methods, there have been three main approaches of impact:

- grammar-translation based approaches
- audiolingual/audiovisual approaches
- communicative language teaching

In general, it can be observed that less commonly taught and researched languages are still basically taught and learned with an emphasis on grammar, while internationally more frequently taught languages such as English, German and French have progressed to a communicative approach with an emphasis on language production and a more implicit approach in the teaching of grammatical structures. Textbook designs have adhered to these principles more or less strictly, often mixing approaches and designs.

50 years since the beginning of modern research in language teaching, there is still surprisingly little evidence of cause-and-effect classroom research as far as the practical use of textbooks is concerned. All different approaches can cite success stories of learners and courses to support their own claims of effectiveness. Since we have no clear picture of why people succeed or fail in learning languages, for which there may be a multitude of potential reasons, it is not easy to gather evi-

dence for the success of the various methods and to establish the reasons behind their success. The main reason lies in an yet unresolved research problem: While it seems comparatively easy to single out specific factors of successful learning under experimental laboratory conditions, it seems practically impossible to attribute success and failure in classroom learning situations, which are affected by a multitude of visible and invisible factors, many of which are subconscious and therefore inaccessible through introspection[1]. This is one of the most persistent problems in human cognition research.

It seems fair to say at this point that no single method has managed to produce irrefutable proof of its superiority. In the context of German as a foreign language (GFL), most researchers currently seem to agree on the existence of a *post-communicative era*, a term first coined by Hans-Eberhard Piepho in the late 1980s. The term refers to an eclectic approach which applies methodological tools stemming from more than one approach, mixing teaching and learning strategies focusing both on grammar and fluency training. Another frequently used term *post-method era*. *Post-method* may not seem very precise – after all, we are still following methodological considerations – but it does imply that the era of macro-methodological approaches is over and that no single method can claim to encapsulate the multitude of research findings in language acquisition. The present situation of language education research with respect to textbook design can thus be summarized as follows:

- There is a varied range of different learning cultures – scenarios and exercises cannot be described within the framework of a single methodological concept;
- Most international curricula and textbooks cannot be attributed to a single method. More often than not, they incorporate a variety of methodological approaches;
- Individual exercises, on the other hand, cannot be labeled 'communicative' or 'audiolingual' without taking their contexts into account;
- The quality of an exercise ought to be measured with reference to its contribution to a communicative task – if we agree that communicative output remains the overall goal;
- It is clear and verifiable that different methods lead to different results (Long, 2009);
- On the other hand, there is no proof of the overall superiority of any single methodological approach;
- The choice of methods depends on the goals – for example, if you want to learn how to speak the language or practice speaking;
- And this is because there is ample evidence for the principle that *time on task* is of vital importance.

This article aims to summarize four major models of language learning and acquisition that have been proposed as theoretical frameworks for classroom instruction and textbook design, and to discuss their impact on textbook-based language learning. The discussion below covers three levels of language teaching research from theoretical assumptions to principles and standards and finally models with direct impact on the design of classroom instruction (Funk, 2010). As they cover different aspects of language teaching, they can be considered complementary. These four models are:

- *Model 1:*
  Willem Levelt revisited – a lexically driven learning model proposed by the Dutch researcher, Willem Levelt, in 1989 and later modified by de Bot in 1992
- *Model 2:*
  The *four strands*, a distributional model with classroom focus first proposed by Paul Nation in 2001 (later: Nation & Newton, 2009)
- *Model 3:*
  Merril Swain's model of the *output hypothesis*, initially meant as a response to Krashen's comprehensible input hypothesis
- *Model 4:*
  The *ACCESS* model of Elizabeth Gatbonton and Norman Segalowitz (2005), which attempts to achieve the reconciliation of different approaches under communicative priorities

I am aware of the fact that there are many more helpful models that seek to explain language learning. However, in regard to textbook design and classroom instructional arrangements, these models offer two major advantages: 1) They provide explanations of how language learning works (in particular, models 2 and 3), which appear plausible in the light of recent neuroscientific findings; and 2) They provide practitioners with guidelines for the planning and distribution of classroom practice.

These models all focus on the central question of how to obtain better and sustainable results in language classes. Willem Levelt's model, for example, is basically a theory driven concept that calls for practical consequences. Paul Nation's four strands provide a framework of principles, while the ACCESS model and Swain's output model aim at providing progressional concepts and classroom scenarios.

The models also take into account that we have moved beyond the credo of instructionism and constructivism of the 1990s, acknowledging that learning is basically the construction of meaning, which can be assisted by the arrangement of materials by teachers and textbooks in instruction. Teaching and hence textbooks can provide materials and feedback, map out a path of learning, give support and counsel, and steer and encourage the construction of meaning, which occurs most frequently and is most effective in social and topic-based interactions with focus on communicative tasks. Textbook authors and teachers face the same challenge to provide opportunities and create real or virtual learning environments which make both intentional and explicit as well as implicit and incidental learning more likely to happen. One of the main challenges for teachers and textbook authors is the creation and arrangement of learning scenarios that enable and promote implicit and incidental learning (for the importance of subconscious processes, see Eagleman, 2011).

The interaction between learners and textbooks in educational settings can be summarized as in Figure 1:

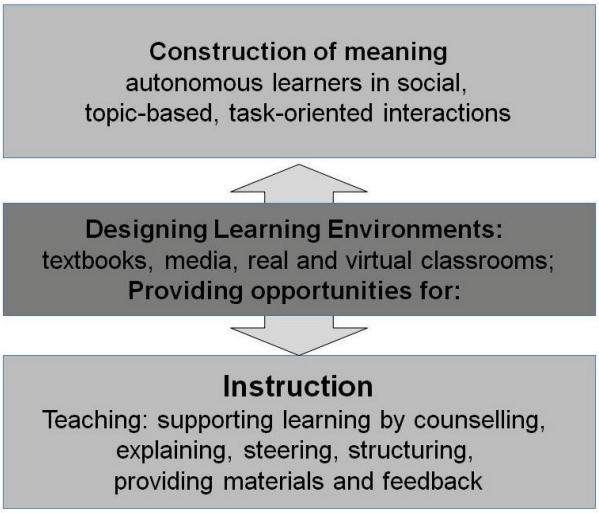

Fig. 1. Interaction between learners, learning environment and teaching materials (see Reinmann-Rothmeier & Mandl, 2001)

2 Willem Levelt revisited

When Willem Levelt developed his model of speech production in the late 1980s at the Max-Planck-Institute in Nijmegen, he was seeking to provide an explanation for oral speech production. De Bot subsequently applied his model to second language acquisition (see Fig. 2), asserting that L1 and L2 production develops along the same lines. Levelt makes a distinction between a con-

scious speech act (what I want to say), and an intentional act and, on the other hand, its subconscious, automatic processing (i.e. from the intention to the formulation and the articulation of an idea), which has received much attention in recent research. His also claims the central role of the lexicon, which implies a great amount of grammatical knowledge is stored in formulaic phrases – more than Levelt might have assumed in the 1980s. The rising amount of research on the role of formulaic language and its contribution to both fluency and correctness (see e.g. Vögel, 2012) clearly indicates that the amount of prefabricated chunks available in the lexematic store may be of much greater relevance to oral competence than the conscious grammatical encoding procedure.

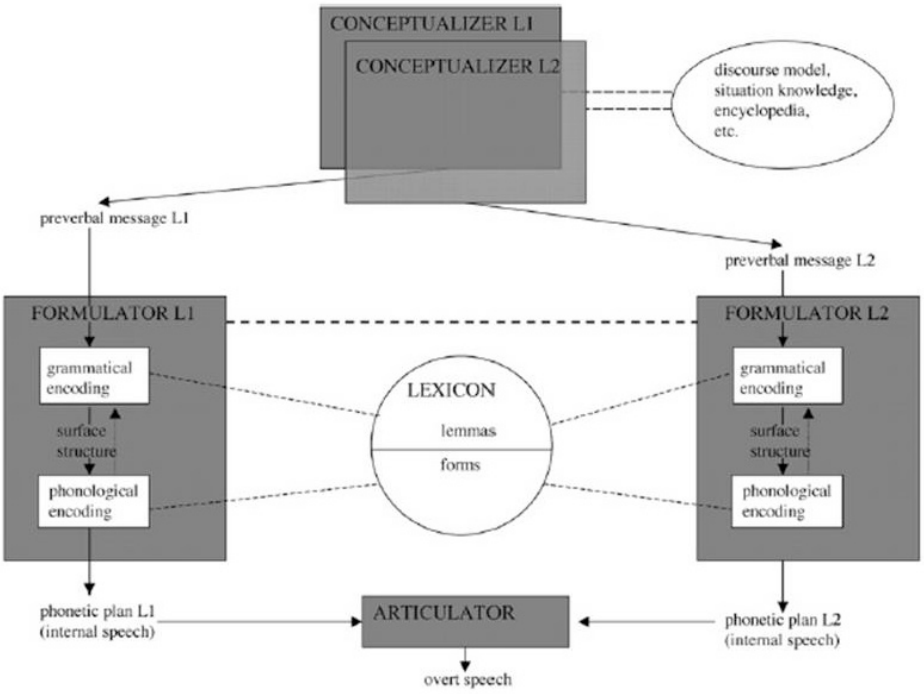

Fig. 2. De Bot's (1992) model of second language acquisition (source: Hartsuiker & Pickering, 2008)

Although the model has been around for some time, it is only in recent times that it is again being discussed frequently (e.g. Bornkessel-Schlesewsky, 2010; Muranoi, 2007; Skehan, 2009; Tschirner, 2010) because of a number of advantages it offers:

- The model takes into account the lexical base of foreign language learning (including grammar) and supports clearly all lexical approaches;
- It possesses some neuroscientific plausibility, because it takes the explicit/implicit paradigm into account and makes a clear distinction between them;
- It distinguishes between conscious and subconscious processes, and adds the concept of the localization of identifiable brain functions, which is also supported by fMRI (functional magnetic resonance imaging) findings; and
- It is 'output'-oriented, as it emphasizes the importance of oral competence which is also a central learning goal in all modern approaches to language training.

The model has a number of practical consequences, as it supports the introduction of both lemmata and lexematic forms at an early stage in the teaching process. Grammatical encoding and monitor use subsequently follow at a later stage. It also supports a task-based teaching conception with an initial explicit pragmatic task pinpointing speech acts and conscious intentional considerations. Thus, it is perfectly in line with the most widely discussed concepts of the post-method-era and generates ideas for the planning of training sequences, which will be discussed later in this

article. The future challenge resulting from the model is: How do we translate it into a sequence plan for lessons that gives learners optimal support for all stages of the encoding process?

3 Paul Nation's four strands model

Traditional foreign language learning settings are characteristically imbalanced in their distribution of focus on learning activities. While much attention is being paid to reproductive exercises with a focus on grammatical correctness, comparatively little classroom time is being devoted to oral skills – to listening and speaking. This is usually related to interactional settings which are mostly teacher-centred, thus leaving little time and space for individual learning and problem-solving strategies in smaller groups. This *focus-on-forms* approach (see Long, 2009) leads to a preoccupation with correctness and grammatical knowledge, with hardly any attention to competent and fluent language use (see Fig. 3).

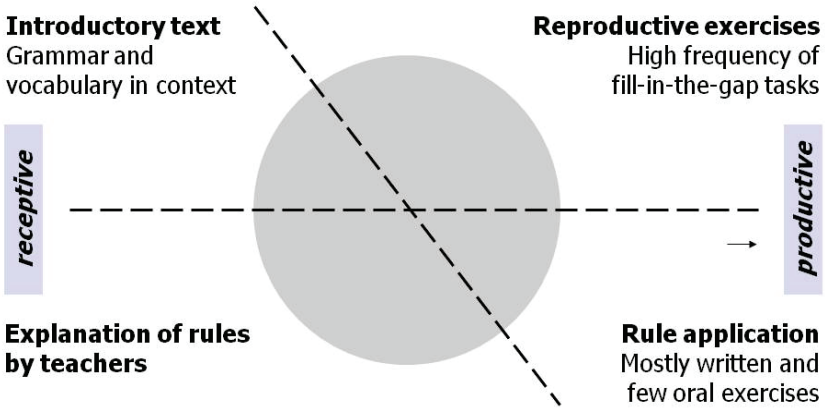

Fig. 3. Traditional model: Focus on forms

Indeed, if the correct application of rules is the prime target of teaching and testing, this model will serves this purpose well, since people will eventually get very good at what they practice, provided they are informed about the goals and there is enough time and practice materials. Some textbook authors have concluded that they only have to provide sufficient practice materials. Consequently, some German textbook series ended up having workbooks of a few hundred pages dominated by cognitive fill-in-the-gap type exercises. Increasing the dose of the wrong medicine, however, will not produce the desired results. Although the *quantity* of exercise time on task is an important factor in habit formation, the *quality* of the exercises counts as well and may prove to be a much more important factor. Exercises should always be designed from the end of the process, that is, the intended learning outcome, taking into account the target task they try to prepare students for. In other words, if the final task asks for the fluent use of language in dealing with a certain topic in a communicative setting, it will not make much sense to concentrate on exercises on the correct use of forms in certain topic areas, which is exactly the case of the fill-in-the-gap-type exercises. The most important planning criteria to determine the quality of exercises at all stages of the learning process are:

- What are my learners supposed to do with language ultimately?
- Which steps do I have to take en route to these goals?
- Which kind of assistance in terms of methods and materials would learners need at which point of time?

Thinking through the process from the final outcome leads to a more balanced approach taking into account the fact that a learning process leading from input processing to the preparation for

output will eventually focus on forms as well as habit formation through oral practice and repetition.

In his book on vocabulary learning, Paul Nation (2001) suggests that a balanced distribution of activities in four learning areas, called "the four strands," provides the best conditions for output-oriented foreign language learning results. The suggestion to devote an equal share of activities to meaningful input, language structure, meaningful output, and fluency practice is based on empirical data from observations and output testing.

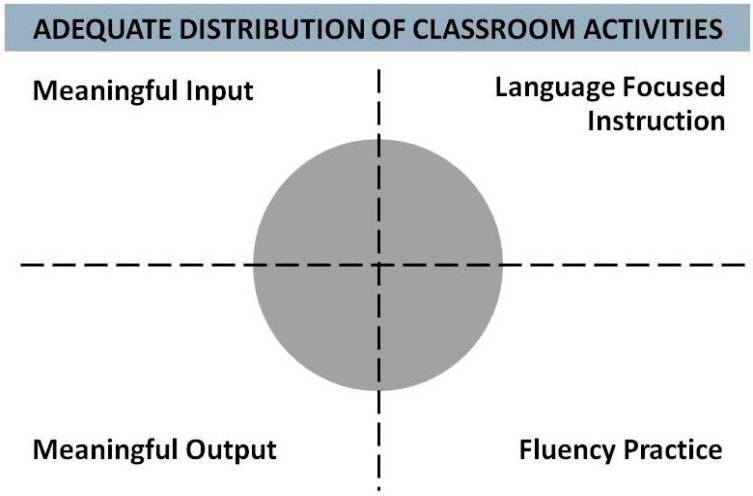

Fig. 4. Nation's four strands model (see Nation, 2001; Nation & Newton, 2009)

Obviously, the model holds a number of advantages *and* challenges as well. It is a model for structural curriculum planning in a task-oriented learning environment. It provides a model for textbook and lesson/sequence analysis. It calls for new types of task-oriented exercises, ranging from the elicitation of forms from meaningful input to a combination of output and fluency practice. It should not, however, be considered as sequence model for classroom proceedings to be read clockwise.

The excerpt in Figure 5 from a major GFL textbook for adult learners, "studio D A2" (Funk, Kuhn, Demme, & Winzer, 2007), provides a good example of a combination of language focused instruction and meaningful output. It also demonstrates that task design can and indeed should frequently cover not only one strand or area of learning. The pragmatically meaningful phrase *Hast du Lust ...* ("Do you feel like/how about ...?") is introduced here in combination with a number of interchangeable activities. In this example, learners use a subordinate clause with an infinitive without any prior explicit grammar explanations. The comprehension of the new form is a result of its use and the repetition of the pattern. Mistakes are avoided through the task design, which leaves no room for wrong choices. The use of a classic audiolingual design is combined with a communicative goal setting and an authentic interactive pattern. This clearly goes beyond the classical audiolingual approach.

Fig. 5. Example of a textbook task combining language focused instruction and meaningful output (source: Funk et al., 2007, p. 50)

The sequence in Figure 6 from "geni@l Kursbuch A2" (Funk, Koenig, Koithan, & Scherling, 2003) also shows the influence of this model on recent textbook design for young learners. Exercises 2 and 3 clearly focus on communicative output in classroom interactions, while Exercises 3 and 4 have a grammar focus with a topical reference as the starting point. Although the progressional sequence from Exercises 2 to 5 itself does not seem to be very well suited for the communicative goals, the activities and exercises represent a big step forward from isolated form-focused exercises to a sequence that starts with meaningful input, proposes open-ended interactions, creates a need for the early independent use of new forms (see also Model 3), and ends with the grammar-focused reflection of the forms used previously in the chapter.

In teacher training seminars, Nation's distributional four strands model is used, for instance, to analyse individual tasks and exercises, identify their contributions to the achievement of communicative goals, design training sequences and evaluate textbook design in general. The model thus helps to promote awareness of task goals and quality, and generally calls for more a more even distribution of learning activities. In the course of such seminars, participating teachers frequently discover that there is a lack of meaningful output and fluency practice in their course materials.

Fig. 6. Example of a textbook sequence influenced by Nation's model (source: Funk et al., 2003, p. 61)

4 Merril Swain's model of the output hypothesis

Discussions among language educators in the early days of communicative approach in the 1980s were dominated by Krashen and Terell's (1983) so-called *natural approach*, which combined a number of hypotheses and was given a marketable label – as a matter of fact, who could be opposed to something 'natural'? In fact, Krashen's (1982, 1985) explanations of the processing of comprehensible input, as well as the (restrictions of) monitor use helped to provide insights into the language acquisition process and have influenced a generation of teachers in those days, in particular, in the US. Nevertheless, the model has drawn criticism from the very beginning (see e.g. McLaughlin, 1987), ranging challenges against its so-called non-interface position (i.e. the claim that cognitive input could never become relevant intake for meaningful output) to the natural order hypothesis (i.e. the claim that the acquisition of all language forms follows a pre-determined acquisition order). Merril Swain (1995) was one of the first researchers to question Krashen's claim that learners can only benefit from comprehensible input (which refers to input that is motivating

and slightly challenging, because it is just a little above the learner's level). She pointed out and proved that learners also learn from their own output and can draw motivation for further improvement from discovering gaps in their interlanguage systems. She concluded that attempts ought to be undertaken to bring the learners into a position where they are motivated to produce meaningful output at a very early stage of the learning process – contrary to Krashen's assumption of a silent phase. She proved that learners pay much more attention to input data, when they are desperately searching for a word or a phrase to express meaning in reaction to something they see or hear. Selective attention and self-directed hypothesis testing become key factors to learning and the retention of words and phrases. Figure 7 summarises Swain's model.

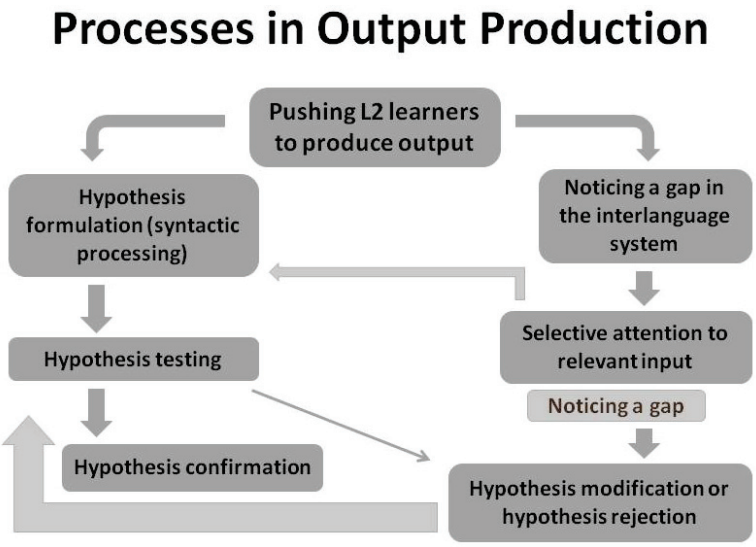

Fig. 7. Processes in output production (based on Swain, 1995, 1998)

The cognitive sequence described by Swain poses two major challenges for textbook designers, curriculum developers and lesson planners as well:

1. How can we bring students into a position where they want to produce output at an early stage of a lesson on the basis of little input and prior to cognitive learning phases with focus on form?
2. How can language educators ensure that output is nevertheless acceptable and useful as a basis for further language development and self-correction?

Researchers and textbook designers have to date failed to provide systematic answers to those central questions. In January 2010, in a preparatory seminar in Jena, Germany, I set out to explore ideas for classroom learning and discussed these questions. The seminar participants shared the conviction that this is possible and we produced ideas and prepared activities to generate output and to have five Indian teachers of German test Swain's hypotheses. Four lessons were prepared, and subsequently taught, video-taped and analysed.

The lessons focused on a fairy-tale role play and an activity which required learners to compare a city (Delhi) then and now. The results show that the prepared role play – with most of the thematic frames and dialogue structures prepared in advance – led to improvised dialogues beyond the phrases given by the text cards, simply because the learners were motivated by the playful activity of acting out a scene in costumes. In the second example, the students were asked to produce a text comparing a city then and now. Here the students were provided with the first four words of sentences, including the syntactic structure, the past tense form, and a few keywords. Here, it seemed that the familiarity of the learners with the subject motivated them to takes risks and produce sentences they had never produced before (project results will be published soon). From the

Delhi study and the video recording of the lessons, three conclusions can be drawn with regard to the two key questions stated above:

1. Playful activities such as role plays with partially open outcomes can promote an active interest among students for the production of early output;
2. The motivation of interacting with others in the classroom to produce output is enhanced by classroom scenarios which call for more than just the production of language. Scenarios should enable movement in the classroom, the creation of props such as clocks, puppets, pictures, and so forth. When students create and produce things together, they are ore motivated to talk about their products;
3. The topical reference and the communicative value of a task should always be linked to the real-life situations and (language) experience of the students.

Classroom-based research should test scenarios of early output in line with these premises to provide textbook authors with a set of tools and best practices for the push for output.

In two recent GFL textbook series, a number of ideas and techniques to elicit early output and to facilitate the testing of hypotheses can be observed. The example in Figure 8 from the textbook "geni@l Kursbuch A2" (Funk et al., 2003) shows student products from the classroom. Students in Ticino (Switzerland) in the 7th grade (12–14 years) with A2 proficiency created persons wearing all kinds of clothing using cutouts from magazines and then talked about their products. The pictures in the textbook were intended to provide a blueprint for a hands-on classroom activity pushing for language output – before the introduction of vocabulary and structures. The semantic fields "clothing" and "colours" are activated in the mental lexicon before the first exercises, in which the students are asked to comment on each others' clothing. Personalizing the activity at this point adds to the students' motivation; students are really motivated to talk and start to ask for words. If they fail to convey the intended message, they will rephrase and try again – a perfect illustration for pushed output.

Fig. 7. Example for pushed output (source: Funk et al., 2003, p. 42)

In the next example in Figure 8 from the GFL textbook "studio D A1" (Funk, Kuhn, & Demme, 2005), students are provided with a number of short statements from persons who describe how they get to work every morning. Basic communicative structures from the texts are subsequently

presented and the students are asked to make immediate use of the structures that contain rather complicated forms such as prepositions followed by the dative case. These forms will usually only be used after a long series of practice, since they can only be acquired at a later stage, as Erika Diehl (2000) demonstrated in the Geneva based "DIGS-Projekt." However, it is generally necessary to introduce the dative case in the first year of German (A1) in order to ask for and describe the position of objections and to ask for and give directions, although mistakes will be inevitable and highly frequent. The trick here is to enable students to produce output in a 'safe-mode-exercise' type that leaves no room for choices and errors. Consequently, students will be able to express their own ideas with few mistakes. Since the choice of the three articles in German is the real underlying cause of mistakes here, it seems pointless to train grammatical choices before the free communicative use of structures. In fact, as Diehl (2000) has proven, talking about directions and movement at the A1 level would not otherwise be possible. The example shows one important precondition for early output: Students should not be left with grammatical choices that direct the focus onto forms, but rather the tasks should provide them with pre-fabricated forms to express meaning.

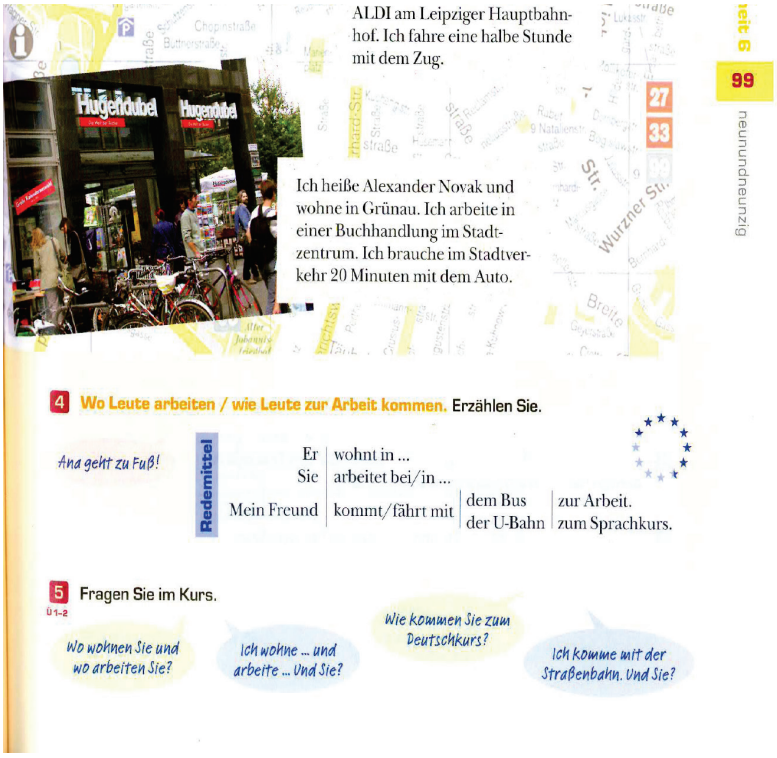

Fig. 8. Example for early output with free communicative use of structures (source: Funk et al., 2005, p. 99)

In teacher training seminars, student teachers and future authors can be provided with video recordings and textbook examples like those in the figures above and then asked to transfer the models to other situations and structures.

5 The ACCESS-Model of Elizabeth Gatbonton and Norman Segalowitz

As stated earlier, the four selected models discussed in this article cover all levels and different areas of the language learning process. While the Levelt model gives us an explanation of how

speaking evolves in the mind, Nation and Newton's model of the four strands helps us to balance learning activities. Swain's output hypothesis model addresses the problem of sequencing and directs our attention to the *what* and *when* of output. Our fourth model has the acronym ACCESS as title, which stands for:

A *Automatization* in
C *Communicative*
C *Contexts* of
E *Essential*
S *Speech*
S *Segments*

It also directs our attention to the necessity of the automatization of output, but also takes into account that teachers and learners expect a fare share of grammar work in the classroom, which seems to be especially true for teachers and learners of less commonly taught and researched languages (e.g. most Asian Languages). In fact, there is a direct correlation between the extent and the quality of teacher education and the amount of formal grammar instruction in classrooms; Less well-trained teachers make extensive use of explicit grammar instruction, while better trained teachers use a more balanced approach and employ fewer grammar exercises. Elizabeth Gatbonton and Norman Segalowitz took this (overt or hidden) reluctance of teachers follow communicative language teaching routines into account and proposed a model that tries to reconcile the necessities of habitualisation and automatization with the teachers' impulse to direct students' attention to formal training. In their own words,

> Essential Speech Segments refers to the targeted set of utterances that students can go home with after every lesson. ACCESS ensures that these essential speech segments are elicited and practised (hence, Automatization) in genuinely Communicative Contexts so they can be produced with greater accuracy and fluency (Gatbonton & Segalowitz, 2005, pp. 328–329)

They propose three phases in their model (see Fig. 9).

PHASE 1
Creative Automatization Phase
Pre-task: Introduce theme or topic, test learner readiness, demonstrate task, and elicit essential speech segments
Main Task: Learners engage in a task or tasks in which functionally useful utterances are used and elicited naturally and repeatedly
Sample tasks: Problem solving, role-plays, games, simulations

PHASE 2
Language Consolidation Phase
Aim: Strengthen learner control of problematic utterances elicited and practised in Phase 1
Sample tasks: Fluency, accuracy and grammatical discovery tasks

PHASE 3
Free Communication Phase
Aim: Test the use of practiced utterances in context
Procedure: Learners engage in a free communication activity or activities that deal with topics compatible with those of the Creative Automatization Phase
Sample activities: Problem solving, role-play, games

Fig. 9. Three phases of the ACCESS model (Gatbonton & Segalowitz, 2005, p. 329)

Although the model, which has a substantial focus on forms, may be able to reconcile grammar-focused teachers with communicative language teaching, the need for the more form-focused

consolidation phase could occur at any point in the lesson sequence and need not be fixed in the sequence. In fact, it may fall into into the midst of the communicative phase.

For the planning and design of GFL textbooks, I have adapted the model slightly with the following phases:

1. Working with words and structures in task-based contexts (focusing on content)
2. Practice in lexical items and embedded grammar/chunks of language (automatization 1)
3. Language awareness raising (focusing on grammar and language structures)
4. Target task processing and transfer (automatization 2)

Models of lesson progression are useful and necessary planning tools. However, we should not forget that progressions and learning phases may be very different for individual learners and may not correspond to teaching phases in these models.

6 Conclusion

The post-communicative era is characterized by the fact that there is no single macro-methodological approach that could claim to cover all relevant aspects of teaching and learning. New approaches are not in sight and not very likely to be developed. Language educationists and educators need to consider a number of state-of-the-art approaches and models with possible impact on curriculum planning, distribution of learning activities, and progressional planning for textbooks and classroom instruction. All four models discuss in this article call for a rethinking of task design and thus provide ample impetus for textbook development and teacher training.

Note

[1] For a new, comprehensive view of the surprising extent of subconscious implicit processing, see Eagleman (2012).

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