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Analyzing student teachers' academic literacy needs: A qualitative analysis of Flemish first-year teacher trainees' needs¹

Abstract: In recent years, the student population enrolling in Flemish higher education has become increasingly diverse. Whereas teacher training institutes used to attract mainly students with a diploma of general secondary education, the proportion of students with a technical or vocational educational background has grown substantially over the past ten years. Unsurprisingly, teacher trainers indicate that first-year students start their academic career with increasingly diverging levels of academic literacy and consequently have learning needs in this domain. This study aimed to explore whether established research methods for analyzing second language (L2) learning needs can be applied to a first language (L1) learning context. Thus, the aim of this study was twofold: 1) to determine the academic literacy needs of first-year teacher trainees in Flanders and 2) to investigate the validity and reliability of a specific methodology used for analyzing language learning needs in the domain of L2 acquisition. Drawing on frameworks described by Long (2005a, 2005b) and Brown (2009), a variety of methods and sources was used to collect the data. Open interviews, a language test, a questionnaire, and focus group interviews were employed as methods; first-year students, third-year students, and lecturers participated in the study as sources. The analyses showed that the methodology for analyzing L2 needs enabled us to determine teacher trainees' L1 academic literacy needs. However, our findings also revealed that in order to obtain reliable data on language learning needs, sources and methods should not only be carefully sequenced but should be triangulated as well.

Keywords: Needs analysis, academic literacy, teacher training, academic language learning needs, L1

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1 Introduction

In the field of second language acquisition, conducting a needs analysis is commonly accepted as an indispensable step in curriculum design (Zhu and Flaitz 2005). “[J]ust as no medical intervention would be prescribed before a thorough diagnosis of what ails the patient, so no language teaching program should be designed without a thorough needs analysis” (Long 2005a: 1). In the field of mother tongue education, the use of needs analyses (NA) is much less established, and there is a serious lack of research on the appropriate methodology for conducting needs analyses in L1 contexts.

This article reports on a study in which Flemish first-year teacher trainees’ L1 academic literacy needs were analyzed. The results of the NA were used to develop reading support materials to help students make the transition from secondary to higher education, especially those students whose academic literacy levels did not match the teacher training institute’s demands. The study was inspired by the large number of Flemish teacher trainers who express worries over the growing number of first-year students who enter the teacher training program with insufficient academic literacy skills. Since there is no centralized exam system in Flemish education, and all students with a secondary education diploma are allowed to enter higher education, many Flemish teacher trainers respond to the recent increase in the numbers of first-year students who attended the technical or vocational strand of Flemish secondary education (rather than the general academic strand) by signaling a clear need to assess first-year students’ academic literacy levels in a valid and reliable way. This would enable them to follow up test results with appropriate supportive measures tailored to individual students’ needs.

2 Background

2.1 Needs analysis

In the domains of foreign and second language acquisition, needs analyses have commonly been accepted as a valid starting-point for developing syllabuses, courses and curricula. According to Long (2005a: 1), “every language course should be considered a course for specific purposes”. In a similar vein, Jasso-Aguilar (2005: 150) has asserted that “language training that does not meet the needs of students is a recipe for failure from the standpoint of motivational factors”. Nevertheless, there is not a single universal method that can be used in all

learning contexts because there is no consensus on how a needs analysis should be given shape. Empirical research has deepened our understanding of the complexity of carrying out a needs analysis and has led to new operationalizations (Dudley-Evans and St. John 1998; West 1994). Various approaches have been adopted, including target-situation analysis, present-situation analysis, deficiency analysis, strategy analysis (or learning NA), and discourse analysis; the concept of needs has been broken down into rights, necessities, wants, and lacks. For some, needs analysis has become something of an “umbrella term” (e.g. Hyland 2006; West 1994), which increases the risk of getting lost in a “confusing plethora of terms” (Dudley-Evans and St. John 1998: 123). It is beyond the scope of this article to discuss all the viewpoints that have been raised (we refer to Brown [2009], Jordan [1997], Songhori [2008] and West [1994] for an elaborate description of these features). Recent syntheses on methodological issues concerning needs analysis, such as the opening chapters by Long in *Second language needs analysis* (2005) and Brown's (2009) thorough discussion provide researchers with an overall framework.

Brown defines needs analysis or needs assessment as a “systematic collection and analysis of all information necessary for defining a defensible curriculum” (Brown 2009: 269). He states that a defensible curriculum “satisfies the language and teaching requirements of the students and teachers within the context of particular institution(s) involved” (Brown 2009: 269). Moreover, Brown specifies that “the information necessary to achieve the defensible curriculum includes all subjective and objective information and any other types of information that turn out to be appropriate in the particular needs analysis” (Brown 2009: 269–271). The question arises, then, how such relevant information can be systematically collected. According to Long (2005a, 2005b), a crucial feature of a professionally conducted NA is the use of multiple sources and methods, which will enhance the quality and reliability of the data. Figure 1 sums up the different sources and methods that Long describes in detail.² Since the choice for particular sources, procedures, or combinations will determine which data will be collected, researchers and/or practitioners should make well-considered decisions to obtain reliable, valid, and usable data about the tasks students need to be able to perform to be successful in the program at hand. Below, we will discuss the choice of sources, methods and combinations in more detail.

² This is not an exhaustive list. Brown (2009), for example, describes procedures that are not mentioned by Long (2005b). Brown himself describes their lists as complementary (Brown 2009: 277).

Sources <ul style="list-style-type: none">- (un)published literature- learners- teachers- applied linguists- domain experts	Methods <ul style="list-style-type: none">- intuitions (e.g. (non-)expert intuitions)- interviews (e.g. (un-)structured interviews)- questionnaires (e.g. surveys and questionnaires)- tests (e.g. task-based criterion referenced performance test)- observations (e.g. diaries, journals, logs)- language audits- ethnographic methods
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Fig. 1: List of sources and methods described in Long (2005b)

2.1.1 Sources

Brown’s above-mentioned definition of needs assessment refers to teachers and learners as crucial informants. Likewise, Long (2005b) recognizes them as all-important sources for gathering objective and subjective information on learning needs. Although it is widely acknowledged that learners hold a privileged position in a needs analysis, they have also been identified as potentially unreliable sources with regard to their own present and future language learning needs. This may be particularly the case for students who have not yet started a new program since “they know about the work they have to do but little about language demands” (Long 2005b: 20). Many needs analyses have shown that valid information on objective needs can be more reliably derived from more experienced in-service or graduated students, (language) teachers, domain experts or subject-area specialists (e.g. Jasso-Aguilar 2005; Long 2005b) than from pre-experience students. Nevertheless, the latter can be informative sources when it comes to throwing light on preferences and dislikes with regard to pedagogical approaches or learning styles. In this respect, Van Avermaet and Gysen (2006) make the following claim:

In curriculum design objective and subjective language learning needs have to be balanced. Blindly following subjective needs formulated by the learners themselves, without paying heed to their objective needs, may not be in the long-term interests of the learners. [...] On the other hand, an exclusive emphasis on objective needs may not be ideal either. If second language learners feel that what they are learning is not relevant to their linguistic needs in the outside world, they may become demotivated and even drop out of their courses. (Van Avermaet and Gysen 2006: 21)

Experienced (language) teachers are an equally important source in a needs analysis since they are able to determine objective language learning needs in specific contexts. According to Brown, it is vital to involve teachers in all aspects of the needs analysis process: “any curriculum project will require them to make changes in their working habits, to do extra work, and more importantly, to relinquish some portion of their classroom sovereignty” (Brown 2009: 287). This implies that analyses of needs (“what”) and means (“how”) go hand in hand. Whereas a needs analysis explores actual language learning needs, a means analysis “examines those factors that impede or facilitate curriculum implementation or change” (Graziano-King 2004: 4–5, cited in Brown 2009: 276). Accordingly, a means analysis will need to be carried out from an “ecological” or “environmentally-sensitive” perspective (Jordan 1997; West 1994).

In addition to involving learners and teachers, consulting (un)published literature may be of particular use in needs analyses. Further, job descriptions, authentic e-mails and letters documenting communication in the professional field can be rich sources of information. Domain or subject-specific experts are also potentially rich informants when it comes to identifying tasks, but they tend to be less trustworthy with regard to linguistic aspects of needs (Lett 2005; Long 2005b). On the whole, if one engages various stakeholders in a needs analysis, this could lead to conflicting agendas and issues of authority because needs may be defined and interpreted differently by the various parties involved (Hyland 2006). Nevertheless, even if this makes the interpretation of data more complex, involving various stakeholders will undoubtedly lead to a more profound and fuller understanding of relevant needs.

2.1.2 Methods

With regard to means, Brown (2009) provides a very elaborate list, comparing various procedures. It is beyond our scope to discuss them all, which is why we will compare the two most popular procedures: questionnaires and interviews. Both come in different shapes. The format of a questionnaire depends, among other things, on the type of questions (closed or open, questions about behavior, values, feelings etc.) or the manner in which the questionnaire is administered (group-administered, mail-out survey, electronic questionnaire etc.). Likewise, interviews can differ in form and function (unstructured, semi-structured or structured interviews and individual vs. group interviews).

Each method has its own advantages and disadvantages. Whereas an interview tends to be very time-consuming, and can be open to researcher bias and discrepancies, administering a questionnaire can be a rather quick and cheap

way to gather standardized and systematized data from a large sample. Furthermore, interviews are much more exploratory in nature and they often cover issues more extensively with a smaller number of respondents. Questionnaire surveys on the other hand tend to be less exploratory. Questions will be determined beforehand, response categories are often pre-determined, as a result of which the range of possible answers may be severely limited. In general, “the scope and objectives of the inquiry will largely determine the nature of the investigation, and hence the choice of the most appropriate investigatory instrument” (Schutz and Derwing 1981: 37, cited in West 1994).

2.1.3 Triangulation

Triangulation is a research method in which data from various sources and elicited by various methods are compared with each other to double check results or track down inconsistencies. Triangulation can be adopted to validate hypotheses by investigating them through various methods. “Methodological triangulation can help to reduce the inherent weaknesses of individual methods by offsetting them by the strength of another, thereby maximizing both the internal and the external validity of research” (Dörnyei 2007: 43–44).

Long (2005a, 2005b) claims that the use of multiple sources and methods and combinations is a prerequisite for a thorough NA, and adds to this that the outcomes of triangulation should be investigated in detail in order to increase the credibility and trustworthiness of the (interpretation of the) data. He proposes three types of triangulation in a NA: *triangulation of sources* (e.g. interviews with learners and domain experts), *triangulation of methods* (e.g. a questionnaire and an interview with domain experts), and *triangulation of methods and sources* (e.g. a test for learners, an interview with teachers, and a questionnaire for domain experts). According to Long, in contrast to informal cross-checking of data, the conflicting outcomes of triangulation should be investigated in detail. If, for example, teachers and learners give different answers to the same questions, it is important for the researcher to investigate which source is right and why this is the case. Brown (2009: 283) takes a rather different view on triangulation and identifies seven other types of triangulation: “*data triangulation* (using multiple types of procedures), *investigator triangulation* (using multiple needs analysts), *theory triangulation* (using multiple conceptual frameworks), *methodological triangulation* (using multiple data gathering procedures), *interdisciplinary triangulation* (using the perspectives of multiple disciplines), *time triangulation* (using multiple data gathering occasions), and *location triangulation* (using multiple locations)”. The main difference between Long and Brown is not so much the

number or nature of the distinctions they make, but the importance they ascribe to triangulation. For Long (2005b), it is an essential means of enhancing the credibility and validity of the outcomes of the needs analysis, whereas for Brown triangulation in itself is not a sufficient precondition for a high-quality NA. He even claims that making use of several sources and methods increases the chance of error. Alternatively, he argues that a well-considered sequencing of sources and methods, regardless of triangulation, is much more important. In other words, when developing a NA researchers should carefully consider which procedure should come first, how subsequent procedures can be built on data elicited from previous methods or sources and how these sources and methods can complement each other.

In the end there is no single right approach to conducting a needs analysis. As a consequence, it is an illusion to think that the outcomes of a NA are neutral and a need is measurable in itself (Hyland 2006). The conclusions that are drawn from the data and the decisions that are made with regard to material or curriculum development will inevitably reflect the subjective view of the researcher. Moreover, establishing needs for a defensible curriculum is not only about what is needed, but also about what is feasible within a particular context, because the successful implementation of a needs-based curriculum strongly depends on factors such as financial resources and allotted time (Jordan 1997; Dudley-Evans and St. John 1998). According to West, “needs analysis is, by its very nature, a pragmatic activity, based on highly localized situations” (West 1994: 2). Brown puts it even more firmly:

An obsessive focus on language needs that seeks the “truth” is probably destined to fail. A NA designed to investigate what bits of language the students “really need” to learn is doomed to collapse from the weight of its own single-minded focus. In contrast, a needs analysis that balances information about what options are available (approaches and syllabuses) with information about what various groups of stakeholders think about those options necessarily recognizes that there is no single truth, that NA is a political process, and therefore, that the goal of a NA is a defensible curriculum. (Brown 2009: 286)

2.2 The context of Flemish higher education

Over the last few years the Flemish educational landscape has become increasingly diverse in terms of student population. This is the result of demographic factors (increased number of students from a variety of ethnic backgrounds), the economic attractiveness of higher education (more students with a technical or vocational educational background are motivated to enroll in higher education) and the educational policy measures taken by the Flemish government over the

past 20 years. This policy aimed at recruiting more students of underrepresented groups in tertiary education. Therefore, the government launched financial incentives to encourage institutions of higher education to enlist more socially disadvantaged students and students with a diploma from the technical or vocational strand. It is important to point out that Flemish higher education admission policy is different from most other countries in that all students are allowed to enroll in an undergraduate program of their own choice, regardless of the type of secondary education diploma they hold (general, technical, vocational or arts education).³ Consequently, they cannot be subjected to any kind of binding entry requirement⁴ other than possession of a secondary education diploma. This has led to an increasing diversity in the student population and an increasing linguistic diversity in particular. Linguistic diversity should not only be seen in terms of the growing number of students speaking other mother tongues than Dutch (the main medium of instruction), or speaking an increasing range of varieties of Dutch (including dialects). In this context, linguistic diversity mainly refers to the gap between the students' actual language skills and the linguistic demands raised by tertiary education. In a nutshell, language use in Flemish tertiary education is highly decontextualized and cognitively demanding (Cummins 2009). So, to use the language of tertiary education for learning and development purposes, students need to have acquired a considerable level of "cognitive academic language proficiency" (Cummins 1979) by the time they embark upon their higher education studies. Recent empirical research has shown that many students, native as well as non-native speakers of Dutch, struggle with academic language upon entering Flemish higher education (Peters et al. 2010; Van Houtven et al. 2010).⁵ As a result, an increasing number of institutions of higher education are exploring how they can support and improve students' academic literacy development. Not surprisingly, over the last few years, projects focusing on language support and language policy have increased in number. Many of these projects, however, start with staff members developing language materials enthusiastically, but only a few of them take the students' needs explicitly into account.

3 A diploma is obtained after six years of general, technical or secondary art education and seven years of vocational education.

4 Exceptions are the degrees in dentistry or medicine for which applicants have to sit an entrance examination. For more information on the Flemish educational landscape we refer to the Flemish Government, Department of Education and Training (2008).

5 The results of a language proficiency test for first-year students show that students who hold a diploma from the general education strand performed better than students with a diploma from the technical strand of secondary education. In turn, the latter performed better than students with a diploma from the vocational strand.

2.3 Project description

The needs analysis on which we report in this article was part of a two-year project aiming to develop reading support materials for four courses in four different curricula to improve first-year students' chances of academic success. These support materials were meant to be implemented in the curriculum itself and to be used by the subject or language teachers responsible for the four courses. In other words, the aim of this project was not to develop a special preparatory or extra-curricular course for academic text competence, but to integrate content and language support by adopting a language-sensitive instructional approach (Hajer and Meestringa 2009) to cater for the needs of all first-year students.

The project's focus was on reading and text competence⁶ because there are large qualitative and quantitative differences between text types in secondary and tertiary education. In line with Cummins's above-mentioned distinction between academic and informal language, texts used in higher education tend to be much longer, more decontextualized, and more cognitively demanding than texts used in secondary education. Since (a) literacy skills and text competence have been claimed to be crucial for students' academic success in view of the intensive use of texts and syllabuses in the context of higher education (Jaspaert and Van den Branden 2011), and (b), as mentioned above, a considerable proportion of beginning students lack the proficiency to cope with the academic register of higher education, this project aimed to support students in coping with the written language they encounter on a daily basis in the context of their higher education studies.

Since the project did not want to start from a "one-size-fits-all-approach" (Long 2005a), and since "the language learning needs of particular groups of learners or individuals [...] are learner- or group-specific, [...] [and] are tied to local contexts and may change over time" (Van Avermaet and Gysen 2006: 19), a needs analysis was carried out. Its main focus was on academic text competence and academic reading skills. The results of the NA were then used in the actual syllabus design and development of task-based reading support materials for four courses in four different curricula. Our focus here will be confined to the needs analysis for one curriculum, viz. the teacher training program for primary education.

⁶ Most language projects in Flanders tend to focus on writing. Since there had not yet been a project on reading, and given the crucial role of reading in academic success, the project's aim was to develop support materials for academic literacy and reading.

3 Study

3.1 Aim and research questions

The aim of our study was twofold: practical and methodological. First, we wanted to determine the language needs of first-year teacher trainees to develop adequate reading support materials. In particular, we wanted to find out exactly which reading tasks needed to be included in the support materials and how the latter could be implemented most effectively. This was our “practical” research question. Second, we wanted to investigate the reliability and validity of the methodology we adopted while conducting the needs analysis. In particular, we wanted to investigate whether the methodology of L2 needs analysis could be applied to an L1 learning context to determine teacher trainees’ needs. This research question allowed us to test Long’s hypotheses by evaluating the use of multiple sources and multiple methods in a needs analysis. This was our methodological research question. In short, this study addresses the following research questions:

RQ1: What are the academic L1 reading needs of first-year teacher trainees in a Flemish teacher training program?

RQ2: Which source(s), method(s), and source x method-combinations are the most reliable and informative for an L1-oriented NA?

3.2 Methodology

For the design of our needs analysis we used three sources (pre-experience and experienced students – and lecturers) and three methods (language test, questionnaires, and semi-structured focus group interviews). We will first describe the sources before returning to the methods used.

Our first two sources, the participants, consisted of first-year/pre-experience students and third-year/experienced students. Although pre-experience first-year students are generally not believed to be a reliable source (Long 2005b), we included them in this study since they have a privileged status when it comes to deciding which support materials need to be offered to them and how they will be implemented in their curriculum. We also asked more experienced, third-year students to join because they are said to provide more reliable information. Both language and subject lecturers were the third source in the NA. In the academic context of this NA, they can be considered the domain experts or insiders.

The choice for our three methods was based on a number of considerations. First, we wanted to balance inductive (e.g. unstructured interviews) and deduc-

tive (e.g. questionnaires, tests) methods. Second, in addition to more intro- or retrospective methods such as unstructured interviews, questionnaires or focus groups, we also included a proficiency test. Finally, we did not want to rely exclusively on either quantitative or qualitative methods; therefore, we incorporated both in this study. The selection of multiple methods (and sources), and especially the choice of different types of methods allowed us to set up a triangulation of sources, methods and sources and methods. In the following paragraphs we will discuss the proficiency test of the Profile Language Proficiency Higher Education, the questionnaires and the focus group interviews.

To determine students' actual level of academic text competence we administered a proficiency test. We used two parts of the Profile Language Proficiency Higher Education test. This profile is one of the five profile-based exams of the Certificate of Dutch as a Foreign Language, which is the official international exam of Dutch as a foreign language for all who learn Dutch. The Profile Language Proficiency Higher Education test (= the test) is a standardized test that is administered to non-native speakers of Dutch wishing to enter Flemish or Dutch higher education. The test is linked to level B2 of the *Common European Framework of Reference for Languages* (CEFR). Although this test was developed primarily for non-native speakers of Dutch, we considered it to be an important source in our NA because it describes in detail which language-related tasks students need to be able to perform when entering a Dutch-speaking college of higher education. As such, it can be said to determine the required level of text competence. The fact that a thorough task-based NA preceded the design of this test was another decisive factor in selecting this particular proficiency test as a method. The test was administered to 53 first-year students. In the first part, test takers had to answer multiple-choice questions when reading a text. These multiple-choice questions can be situated at the 'reading-the-lines' level (Gray 1960, cited in Alderson 2000), i.e. the literal meaning of the text, since students had to localize and reproduce literal information. In the second part of the test, students had to read three texts on the same topic, viz. quicksand, and they had to write a summary of these texts. Since this task involves combining and comparing information retrieved from different text sources and writing a summary, it can be situated at the 'reading-between-the-lines' level (Gray 1960, cited in Alderson 2000) (= the reader's critical evaluation of texts).

To design the questionnaires, one for in-service students and one for lecturers, we used the results of a preliminary field exploration (involving unstructured interviews with a limited number of stakeholders) on the one hand and of the language test on the other. The questionnaires asked both students and lecturers to rate the relevance and importance of academic reading tasks, to assess their own (in the case of students) or their students' (in the case of lecturers) skills and

reading strategies use and to provide information on potential reading support materials. More specifically, the questionnaires consisted of general questions relating to the respondent’s background, seven closed questions with pre-determined response categories, and one open question. The closed questions dealt with subjects such as students’ engagement in reading activities/tasks, their use of different (reading) strategies, and preferences with regard to potential reading support materials. The open-ended question asked both respondent groups to describe situations in which students encountered difficulties with regard to academic reading tasks. After a pilot study, the questionnaire for in-service students was group-administered, since we did not want to run the risk of a low response rate or unreliable results in case only highly motivated volunteers took part in the survey. Furthermore, by administering this questionnaire to first- (N = 47) and third-year (N = 20) students we included pre-experience as well as more experienced students in our study. Twenty lecturers completed a questionnaire as well. All questionnaires were paper-administered.

How easy/difficult do you find the following activities?

- 1 = difficult (I usually experience problems with this task/competence)
- 2 = rather difficult (I frequently experience problems with this task/competence)
- 3 = rather easy (I rarely experience problems with this task/competence)
- 4 = easy (I never experience problems with this task/competence)
- 5= does not apply to me (I do not have to perform such a task)

	Easy	Difficult			Does not apply to me
1. I find understanding a text’s (e.g. a syllabus/course text/book) contents ...	1	2	3	4	5
2. I find understanding questions (e.g. in a written exam) and fully knowing what is expected from me ...	1	2	3	4	5
3. I find processing texts (e.g. professional literature, course text/book, etc.) independently...	1	2	3	4	5
4. I find retrieving important information from an article in order to perform an assignment (e.g. a presentation or paper) ...	1	2	3	4	5
5. I find structuring a text (e.g. numbering, highlighting important information, etc.)...	1	2	3	4	5
6. I find using a dictionary ...	1	2	3	4	5
7. I find comparing an article’s arguments with my own ideas on a specific topic ...	1	2	3	4	5
8. I find comparing conclusions in different texts in order to perform an assignment (e.g. a presentation or paper) ...	1	2	3	4	5

Fig. 2: Sample question of the questionnaire

The third method consisted of three semi-structured focus group interviews with lecturers ($N = 6$), first-year students ($N = 5$), and third-year students ($N = 8$). Focus group interviews are “a series of group discussions with the objective of better understanding the attitudes, beliefs, practices, and values on a specific subject” (Bertrand et al. 1992). According to Morgan (1998: 12), “focus groups draw on three of the fundamental strengths that are shared by all qualitative methods: (1) exploration and discovery, (2) context and depth, and (3) interpretation.” In this stage of our NA we preferred group to individual interviews because they elicit interaction and discussion among the participants. Furthermore, they are less time-consuming than individual interviews. The results of the proficiency test and the data from the questionnaires were used for an interview guideline serving as a starting point for the focus group interviews. A moderator and note taker guided the one-hour focus group sessions, which were audio-recorded. After an introductory part in which practical arrangements were made, the participants received a handout with the results of the questionnaire as a guideline for the discussion. Next, the focus groups started brainstorming about possible reading support materials.

3.3 Procedure

In order to guarantee a reliable outcome of the triangulation, not only the choice of sources and methods needs to be carefully considered, but also their sequencing (Brown 2009; Long 2005b). We first administered open interviews with different stakeholders, not to identify specific needs, but to explore the field and get a general idea of the research context. Next, we administered a language proficiency test for first-year students, viz. two parts of the Profile Language Proficiency Higher Education test, at the start of the academic year. The outcomes of the open interviews and language test were subsequently used to develop a questionnaire. The questionnaire was administered mid-term. In turn, responses were used for the focus group interviews, which were conducted at the start of the second term. These interviews were administered successively with third-year students, first-year students and lecturers on the same day. By carefully sequencing different methods and sources we hypothesized that they would complement one another and the resulting sum would be greater than its constituent parts. In order to validate our data and increase the reliability and credibility of our interpretation of the data we triangulated methods and sources. By comparing our sources and methods and combinations thereof we could identify and analyze possible discrepancies.

Fig. 3: Sequence of methods and sources

3.4 Results and discussion

We will first present the results of the needs analysis (research question 1). We will report the results of the language test, the questionnaires and the focus group interviews. In the second part of this section, we will analyze the needs analysis from a methodological perspective (research question 2). We will discuss the advantages, disadvantages and limitations of our sources, methods and the triangulation.

3.4.1 Research question 1

Language test. We administered two parts of the Profile Language Proficiency Higher Education test to 53 participants (L1 = Dutch),⁷ viz. a multiple-choice test and a summary test. The findings indicated that first-year students are good at answering multiple-choice questions that require them to locate literal information in a text. We found a ceiling effect with a mean score of 6.58 out of 7 (SD 0.66).

⁷ All participants indicated that Dutch was their L1. However, six participants said that their mother or father had a mother tongue other than Dutch.

However, the analysis of the summary test demonstrated that first-year students⁸ experienced more difficulties when reading three texts on the same topic and subsequently writing one summarizing report. The scores ranged from 1 to 12 out of 12, with a mean score of 7.35 (SD 2.82). Students' secondary school diploma was found to have a considerable impact on their performance ($p = .039$). Teacher trainees who held a diploma from the general education strand ($N = 25$) wrote better summaries (score = 8.36) than students with a diploma from the technical strand ($N = 16$) (score = 6.37). In turn, the latter performed better than teacher trainees with a diploma from the vocational strand ($N = 7$) (score = 5.71). Although students' secondary education diploma had a significant influence on their test results, we found great individual differences as well. A qualitative, in-depth analysis of students' summaries revealed the following difficulties. Although an outline for the summary was provided, students did not include all relevant information. Moreover, they sometimes incorporated wrong or imaginary information. In other words, many students apparently had difficulties with rendering a correct and complete account of the three texts. Students also encountered problems at the levels of vocabulary and register. In addition, the summaries often lacked clear structure and coherence.⁹

These results lend empirical support to many lecturers' perception that a considerable proportion of first-year students lack crucial academic language skills. In order to meet the demands of higher education students must not only be able to retrieve information in a text, but they also have to be capable of performing complex tasks like finding, interpreting and integrating information from multiple texts. In sum, the language test revealed that the focus of the development project had to be on reading materials at the reading-between-the-lines level (Alderson 2000). However, although the results of the language test showed that not all first-year students were able to meet the language requirements of higher education, they did not allow us to identify teacher trainees' specific needs during the first year of their training program. For this latter purpose, the scope of the test, and the topics treated in the texts, were too general.

Questionnaire. Forty-seven first-year students, 20 third-year students and 20 teachers filled out a pencil-and-paper questionnaire that took about ten minutes to complete. Whereas the language test enabled us to identify problem areas with regard to text competence, the data emerging from the questionnaires not only deepened our understanding of these problem areas but also highlighted

⁸ The analysis of the summaries was confined to 48 students since four students, instead of writing a summary, made a schema of the text.

⁹ For a detailed description of the methodology and the results, we refer to Van Houtven et al. (2010).

students’ reading strategy use, their perceptions of reading difficulties, and their ideas about possible tasks and activities for the reading support materials. With respect to students’ strategy use during reading, the majority of first-year students claimed to mostly/always study the table of contents, consult a dictionary/ the internet and schematize/summarize course texts (see Table 1). However, compared to students’ responses, lecturers were more pessimistic about the cognitive and metacognitive activities students engage in when reading course materials or books. As can be inferred from Table 1, the lecturers believed that most freshmen never study the table of contents, never use a dictionary when they come across unknown words in a text, and never make a schema. Lecturers indicated that only a minority of first-year students execute these strategic activities.

Table 1: Responses to questionnaire question 2 by source (percentages)

		First-year students	Third-year students	Lecturers
Studying table of content of a course text	never	15	5	49
	mostly	72	60	36
	always	13	35	15
Structuring course texts (e.g. highlighting, annotating)	never	0	0	20
	mostly	32	20	37
	always	68	80	43
Consulting a dictionary/the internet while studying a course text	never	2	15	54
	mostly	47	50	31
	always	51	35	16
Schematizing course texts	never	11	20	40
	mostly	67	45	30
	always	22	35	30
Summarizing course texts	never	11	25	28
	mostly	42	10	35
	always	47	65	37

The responses also revealed that activities requiring higher-order reading skills were perceived as more difficult than lower-order reading activities. Although there were differences between the first-year students, the third-year students and the lecturers regarding the order in which they placed them, the three groups considered the following five activities to be the most difficult:

- Comparing ideas from different course texts
- Comparing information in a course text

- Understanding course text in detail
- Locating main ideas in a course text
- Structuring course text (highlighting, annotating, etc.)

However, lecturers systematically perceived these activities as more complex than the first- and third-year students. In sum, the findings that emerged from the questionnaire were consistent with the findings of the language proficiency test. Although it was clear from the questionnaires that the focus had to be on higher levels of text competence, there were considerable differences in perception between students, especially first-year students, and lecturers.

Focus group interviews. The focus group interviews were conducted with five first-year students, eight third-year students and six lecturers (two language teachers and four subject teachers). First, with the results of the questionnaire close at hand, the participants discussed students' engagement in reading activities, use of different reading strategies, attitudes towards reading, approaches to course texts, etc. Because the participants in the focus group interviews explored and contextualized the results of the questionnaires from a context-specific perspective, a better understanding of the practices and beliefs of these particular students could be built up. Moreover, some findings that had emerged from the questionnaires were put in a new perspective. The following examples illustrate this nicely. In the questionnaire 68 % of the first-year students claimed to "always" structure their course texts, 32 % said they "mostly" structure their course texts. During the interviews, however, this finding was modified not only by the lecturers but also by the first-year students themselves. First-year students interpreted highlighting as mere underlining and "using different colors", whereas lecturers emphasized the purpose of highlighting and annotating, that is, organizing, synthesizing and retaining ideas and showing relationships among them. There were also differences of interpretation with regard to labels such as "easy", "rather easy", "rather difficult", and "very difficult". In the questionnaire, most in-service students said that understanding course texts in detail was "rather easy", but during the interviews they sided with the lecturers who rated it as a rather difficult task. A third-year student put it like this:

In my opinion it is rather easy to understand a course text in detail because I am already satisfied when I am able to explain the main ideas of the text in my own words. Lecturers on the other hand make higher demands. It is difficult to fulfill all their requirements.

Next, the participants commented on early drafts of reading support materials and on different methods to implement them. They also pointed out for which particular course in the curriculum support materials should be developed.

According to all three focus groups a specific course book on the development of the child was a stumbling block for most first-year students. First- and third-year students, as well as lecturers, showed a preference for support activities geared towards the higher-order levels of text competence (establishing vertical and horizontal links within and between chapters, interpreting discourse markers for text coherence, coping with terminology, etc.). Since students have to study the course book independently (without the teacher's guidance), all participants were also in favor of support materials that would help students process the content independently.

Apart from the above-mentioned similarities between the three focus groups, there were also clear differences between first-year students', third-year students' and lecturers' expectations. Several first-year students expected lecturers to explain difficult parts and words in course texts, to draw attention to main ideas and to make certain relationships explicit (like cause-and-effect or generalization-and-example relationships). One student put it like this: "I expect the lecturer to guide the reading process, because otherwise it is inevitable that you interpret the text in a different manner. The teacher knows best how to interpret a course text."

This finding corroborates West's (1994: 11) statement that "many learners take a passive, non-participatory teacher-dependent attitude towards language learning". Although some third-year students also took a teacher-dependent approach towards (language) learning, most of these experienced students had a more realistic view because of their previous experience in higher education. A third-year student stated:

In the first year I stuck to rote-learning, but now I know that is insufficient and inefficient. In order to meet the comprehension demands you have to be able to apply what you have read to a new case in another context. In other words, you have to make sure you gain a clear understanding of everything you read so that you can make inferences.

Not surprisingly, lecturers perceived passive, teacher-dependent learning styles as inappropriate and therefore they stressed the importance of learner autonomy (Jordan 1997). Consequently, they expressed their wish that the support materials would not only help first-year students to process the course book on developmental psychology independently, but that it would also train the students in becoming more active readers who develop higher-order levels of text competence in other course materials.

In sum, the focus group interviews demonstrated far more clearly than the preceding methods which type of support activities had to be developed. In addition, the analyses clearly revealed in which course the support materials had to

be implemented and gave clear indications as to how they should be implemented. By carrying out the focus group interview with the lecturers after the interviews with the students we could also check the feasibility of students' expectations.

From the needs analysis to the development of tasks. The results of the NA showed that first-year teacher trainees had a wide range of language learning needs. Unfortunately it was not possible to satisfy all those needs, as is mostly the case. Since any NA has to take into account feasibility and practical constraints (Brown 2009) such as time constraints, limited cooperation between lecturers, and institutional obstacles, we decided to develop support materials for one particular course, Developmental Psychology. The course's learning objectives were taken into consideration when designing and developing the materials. Students were supposed to engage in the support activities (e.g. a reading guide, exercises on reading comprehension, exercises on structuring and comparing information, etc.) individually at home but occasional classroom sessions under the lecturer's supervision were also organized to help students monitor their reading process and discuss difficulties they had encountered while doing the support activities at home. In addition, opportunities for collaborative work were explored. For instance, because it was not possible to focus on vocabulary development during Developmental Psychology, a collaboration was set up with the lecturers of the course "Dutch proficiency".¹⁰

In all, the NA informed us that generic support materials, offering a general, non-subject specific course of academic reading, would be inappropriate and inadequate for the students involved in the study. Moreover, the NA clearly showed the importance of integrating reading support in the actual course and curriculum of the program the students are following. In other words, a needs analysis is a prerequisite for effective design of "defensible" support materials.

3.4.2 Research question 2

Sources. In our NA, three sources were taken into account: first-year students, third-year students, and lecturers. The students provided us with valuable information for the selection of the course, the type of activities, and possible pedagogical approaches. When it comes to determining their specific needs, third-year students proved to be more reliable informants than freshmen because the latter

¹⁰ It is beyond the scope of this article to discuss the support materials in detail. We refer to Peters and Van Houtven (2010) for a detailed discussion.

tended to perceive many reading tasks as easier than the lecturers and more experienced in-service students did (see *supra*). The findings of the questionnaire and the focus group interviews suggest that pre-experience students cannot accurately assess the skills they need for their future challenges, which is consistent with Long's findings (2005b). The pre-experience/first-year students in our study could thus be situated at the level of unconscious incompetence (Howell 1979, 1982, cited in Huang 2010), where learners are not aware of their own weak points. This finding is in line with Huang (2010: 532–533), who also found a mismatch between students' perceived needs and expectations and those of instructors. It was clear that the experienced students had already moved to the zone of conscious incompetence because they had a better understanding of the skills that are required for the successful completion of their studies. Nevertheless, our findings demonstrated that pre-service or pre-experience students were reliable informants for a means analysis, which is crucial for a successful implementation of the learning materials in the curriculum. As was correctly pointed out by Van Avermaet and Gysen (2006), students' subjective needs should be taken into account as well, although our analysis also indicated that they need to be balanced with objective needs. These objective needs were best described by the experienced students and the domain experts (the lecturers) in this study because they provided us with reliable information on freshmen's skills and the challenges they are faced with during their first year in higher education. As Brown (2009) argues, it is important to involve lecturers in the NA because they are the ones who have to implement the support materials. A further benefit of involving lecturers in a NA is that it may result in increased motivation and enthusiasm, which facilitates the implementation of the learning materials, as proved to be the case in our study.

Although our NA showed that the use of several sources certainly has merit, researchers should be aware of conflicting agendas and issues of reliability. Each source has its own strengths and weaknesses. Pre-experience students seem to be more fit for a means analysis, whereas domain experts or experienced students are more reliable sources for identifying objective needs. Thus, to obtain a complete picture of students' needs in a specific learning situation, multiple perspectives need to be combined.

Methods. Three methods were employed in this study: a language test, a questionnaire, and focus group interviews. The language test illustrated some of the problems first-year students encountered when reading and summarizing texts. Compared to a self-assessment (such as in the questionnaire for students), a language test may provide more objective information on students' strengths and weaknesses. A disadvantage, however, may be that the development of a valid and reliable language test on the one hand and the correction of language

tests on the other can be very time-consuming. Moreover, it is generally not possible to test all language skills or relevant reading skills. As a result, a language test can offer only a limited perspective on students' language proficiency and language learning needs.

Our questionnaires consisted predominantly of closed-response categories. They allowed us to determine which activities were perceived as difficult, which strategies students employed and which activities were considered useful. The responses clearly demonstrated that students experienced more difficulties as the required level of reading competence increased. However, students' and lecturers' responses did not provide any further insight into *why* particular aspects of reading were easy or difficult, which is crucial for the development of learning materials. Our findings, especially those gathered during the interviews, seem to corroborate Dudley-Evans and St. John's (1998: 134) claim that questionnaires using Likert-scale response categories allow respondents to quickly assess views, attitudes and opinions but not to unravel the reasons behind them.

In addition, our findings showed that the use of a questionnaire raised issues of validity. First, the interviews demonstrated that there were differences of interpretation between lecturers and students on the one hand and between students themselves on the other with regard to labels such as "rather easy", "rather difficult", "very difficult" (see also subsection on focus group interviews). The responses did not allow us to pinpoint how respondents interpreted given response categories. Second, the responses did not inform us on whether students described what they actually did, what they thought they did, or what they thought they ought to do. Third, it is not clear whether we received a full picture of students' needs since pre-specified response categories were given. For instance, students had to order several activities in terms of usefulness. Although the questionnaire was piloted, it cannot be ruled out that some students assessed other activities as more useful. As a result, we believe that our findings corroborate Hyland's (2006) claim that an over-reliance on questionnaires in a NA enhances the risk of offering a one-dimensional picture with only limited reliability.

The last method we employed was the focus group interview. Morgan (1998: 12) points out the following three strengths of qualitative research techniques: exploration and discovery, context and depth, and interpretation. We opted for a semi-structured interview with a predetermined set of discussion topics to prevent the occasional hit-and-miss nature of unstructured interviews. However, participants in each group remained free to discuss or clarify other relevant issues. Consequently, the data collected during these discussions broke new ground by allowing us to discover and explore needs different from the ones that were raised in the language test and the questionnaire. For example, both the first-year and the third-year teacher trainees indicated that they experienced

serious problems when studying a course book independently at home, especially with regard to one particular course. This example illustrates that the information obtained from the focus groups was more specific and detailed than the results obtained through the other methods we adopted. Second, the focus group interview contributed substantially to our in-depth analysis of students' needs and challenges by allowing us to assess and appreciate opinions and utterances that had emerged from the questionnaires: the focus groups provided essential information on the reasons behind many of the responses the students gave to the questions in the questionnaires.

In all, the focus group interviews yielded the most useful and practical information. It was the crucial step in the design and development of the reading support materials. The findings that emerged from these interviews, however, could not have been obtained without taking the preceding steps in our NA. In other words, without the sequencing of the language test, the questionnaire and the interview we would not have been able to identify students' needs. This is in line with Brown's claim (2009), who has also advocated a well-considered sequencing of sources and methods. Moreover, it is important to note that the reliability of the interview increased substantially because experienced students participated in addition to lecturers and first-year students. The third-year or (more) experienced teacher trainees created an added value because they were more conscious of the challenges first-year students are faced with in terms of reading requirements (see also sources). We agree with Morgan (1998: 59) who argues that

the fact that each group is homogeneous increases the participants' comfort in talking with similar others. The fact that the separate groups consist of different types of participants allows you to assess how similar or different the various categories of participants are. Focus groups are thus especially useful for determining whether one set of programs will really fit all needs.

So, with respect to the second research question, our analysis provides firm evidence that in order to obtain reliable and valid data from a needs analysis, one should use several methods and sources. Unlike Brown (2009), Long (2005a, 2005b) advocates triangulation to enhance the reliability and validity of a NA. Our study lends support to his claim. We found conflicting results between pre-experience students' responses in the questionnaire on the one hand and lecturers' and experienced students responses in the questionnaire as well the information revealed in the interview on the other hand. A triangulation of methods (first-year students' responses given in questionnaire versus in interview), of sources (first-year students versus lecturers versus experienced students) and of methods and sources (first-year students' questionnaire responses versus experi-

enced students' interview) had to be conducted to investigate and clarify our conflicting outcomes. Thus, we do not agree with Brown, who argues that triangulation increases the chance of error. In our case, the opposite proved to be true. However, our findings do support Brown's plea for a well-considered sequencing of sources and methods.

As far as methods are concerned, we believe that the following recommendations follow from our study. The use of a language test as method should be seriously considered because it allows for the objective assessment of students' language proficiency. In addition, administering a questionnaire to pre-experience students and domain experts helps to determine students' needs at a general level. On the other hand, over-reliance on the results of a questionnaire should be avoided. Ideally, interviews are conducted with pre-experience students, experienced students and lecturers. Pre-experience students should be involved because they are crucial for the means analysis rather than the needs analysis. Experienced students and lecturers should be involved because they are important sources for the identification of precise needs. Moreover, lecturers should also be consulted to assess the feasibility, implementation and practical constraints of the support materials.

4 Conclusion

This study set out to determine the academic L1 reading needs of Flemish first-year teacher trainees. In addition, it reported on a methodological analysis of the sources and methods used in the needs analysis. Our study has shown that the well-established methodology for conducting L2 NA can indeed be applied to L1 learning contexts. Our NA revealed which support materials should be developed and how these materials could ideally be implemented. By carrying out a NA, we were able to develop defensible reading support materials, as is advocated by Brown (2009). Even though carrying out a NA is time-consuming, our findings suggest that it is a prerequisite for the design of learning materials. Our study also demonstrates that a needs analysis should not be restricted to an intuitive or informal analysis of students' needs (West 1994: 2). A careful selection and sequencing of sources and methods should be tailored to the purpose of the research. Moreover, our study shows that over-reliance on one method such as a questionnaire can result in a one-dimensional view on students' needs. Thus, a NA should ideally employ several methods. With regard to the sources, it became clear that not every source is appropriate for a needs analysis. Unlike pre-experience students, domain experts and experienced students seem to be more fit for the actual needs analysis. Pre-experience students, however, are a useful

source for a means analysis. Finally, our findings revealed that sources and methods should be triangulated to analyze and clarify any conflicting outcome in order to increase the reliability and validity of the data.

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