

Focusing on a Needs Analysis on English for Geographic Sciences¹

(Aproximación al análisis de necesidades en Inglés para Ciencias Geográficas)

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ABSTRACT

A needs analysis was conducted to develop an English for Specific Academic Purposes course for the major Geographic Sciences with emphasis in Land Use Planning at the Universidad Nacional, Costa Rica. This study reports on the needs analysis process and provides a curricular proposal developed for this program. This investigation aims to contribute to field of applied linguistics since little research has been done on needs analysis in English for specific purposes for Geographic Sciences. Most research has focused on methodologies for data gathering and language teaching approaches.



RESUMEN

Se trata del análisis de necesidades para desarrollar un curso de Inglés para Fines Académicos Específicos para la carrera de Ciencias Geográficas con Énfasis en Ordenamiento del Territorio de la Universidad Nacional, Costa Rica. Identifica las necesidades e incorpora una propuesta curricular desarrollada para este programa. Procura contribuir al campo de la Lingüística Aplicada dado que se han desarrollado pocas investigaciones sobre análisis de necesidades en inglés para fines específicos para las Ciencias Geográficas. Las

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investigaciones se han centrado en metodologías para la recopilación de datos y enfoques para la enseñanza del idioma.

Keywords: needs analysis, English for Academic Purposes, Geographic Sciences

Palabras clave: análisis de necesidades, Inglés con fines académicos, Ciencias Geográficas

Introduction

The School of Geographic Sciences (SGS) at the Universidad Nacional (UNA), Heredia, Costa Rica includes in its curriculum scientific and academic texts published in English, so that the students can read them and apply their content in oral and written reports. In the present study, it was found that students who have not achieved the skills to comprehend the given texts showed a gap in their learning process, for 4 main reasons: (1) professors are not trained to teach the academic content in an ESP setting because most of them do not have the skills in the language; (2) professors share these readings as required; (3) professors expect that students have a B1-B2 English level when taking the courses of the major as established by the Costa Rican Ministry of Education (MEP); and (4) professors from the major Geographic Sciences with emphasis in Land Use Planning (henceforward referred as GSLP) expect students to acquire the necessary language skills after having taken Integrated English I and II.

In the curriculum of the major, GSLP students must take two integrated 4-skills courses that the School of Literature and Language Sciences offers. GSLP professors expect that students either acquire an A2 level by the end of the second course or enroll in their classes with a B1-B2 following the standards of the Common European Framework of Reference for Languages (CEFR).³ However, recent findings have established that students still do not match the exit profile. According

3 Ministerio de Educación Pública (MEP). "Programas de estudio de Inglés. Tercer Ciclo y Educación Diversificada" 022, <https://www.mep.go.cr/sites/default/files/programadeestudio/programas/ingles3ciclo_diversificada.pdf>.

to *El Financiero*, 36% of the population was categorized as B1 by the end of 2021 whereas 64% had a basic level.⁴ This suggests that tertiary level SGS professors should not conclude that their students have an intermediate or advanced proficiency level of English. Therefore, the present study aims to identify the necessities of the population taking this major in the SGS.

Much has been written about Needs Analysis (NA) results and the different methodologies that needs analysts implement to gather information; however, no NA has been found on Geography majors' needs in EAP. The focus in this field has been on teaching strategies to foster the learning process, rather than on NA. NAs have been carried out in English for Specific Purposes (ESP) and English for Academic Purposes (EAP) for many specialized fields, such as those by Alsamadani⁵ in engineering; Syakur and others⁶ in pharmacy; and Oktarin and others⁷ in tourism; but none have been found for geography. In addition, the present NA goes beyond what is commonly done in NAs because it reports on the entire the NA process carried out to develop an EAP curricular proposal for the SGS-UNA. The main objective is to create an English for Specific Academic Purposes (ESAP) course based on the NA conducted. This ESAP course will provide the skills required for students to comprehend academic and scientific texts and report (orally and in writing) on what they understood. This would benefit them since essential literature will not be disregarded, and

4 Francisco Ruíz, "Costa Rica reprueba en Inglés: La mayoría de los colegios no superan nivel mínimo definido por el MEP." *El Financiero*, 2022, <<https://www.elfinancierocr.com/economia-y-politica/costa-rica-reprueba-en-ingles-la-mayoria-de/UEOSUCD7IZADPOCDY3PWZ4I4AE/story/>>.

5 Hashem Ahmed Alsamadani, "Needs Analysis in ESP Context: Saudi Engineering Students as a Case Study," *Advances in Language and Literature Studies* 8, 6 (2017): 58-68. DOI: <http://dx.doi.org/10.7575/aialc.all.v.8n.6p.5>.

6 Syakur, Abd., H. M. Zainuddin, and M. Afif Hasan, "Needs Analysis English for Specific Purposes (ESP) for Vocational Pharmacy Students," *Budapest International Research and Critics in Linguistics and Education* 3, 2 (2020): 724-733. DOI: <https://doi.org/10.33258/birle.v3i2.901>.

7 Rezky Atri Oktatarin, Syahrial, and Alamsyah Harahp, "Needs Analysis of ESP for Tourism Study Program at SMKN 7 (Senior Vocational School) Kota Bengkulu," *Journal of English Education and Teaching* 3, 1 (2019): 14-28.

it will contribute to the research that these students will eventually conduct at their field.

Thus, the present investigation begins by exploring the areas EAP and NA. EAP investigations are studied as one of the branches of ESP. In addition, NA is addressed by explaining the best practices suggested by research. By delimiting these best practices, research on NA and Geographic Sciences and NA and other fields were studied. This led to the identification of a gap in NA research studies as the basis for this article. Furthermore, the researcher explains the NA process for the authorities of the SGS by stating its objectives. The methodology describes the sample criteria, participants, and procedure conducted. The results section delimits how the instruments were applied, analyzed, and scored. A brief overview of the curricular proposal is then provided based on the NA outcomes. The article concludes by delimiting the contribution of this investigation in the field of applied linguistics, and the process of stating not only the outcomes of a NA, but also the process itself that the needs analyst conducted. Together this serves as a basis for future research on NAs in the field of geographic sciences.

Literature Review

Considering previous research conducted on the field of ESP, the objective of this literature review is to present an overview of ESP, best practices for conducting a NA, and the results of previous NAs. Up until now, one of the most common findings in NAs has concentrated on publishing the results of these NAs. These findings have attempted to suggest new approaches and pedagogical strategies for English teaching in specific fields. Most of these contributions have focused their investigations on tertiary education.

English for Academic Purposes (EAP) is a branch of English for Specific Purposes (ESP). For a clearer understanding of EAP, it is necessary to review the concept of ESP. Paltridge and Starfield refer to

the term “ESP” as “the teaching and learning of English as a second or foreign language where the goal of the learner is to use English in a particular domain,”⁸ but other authors, such as Nunan, Dudley-Evans and St. John, Brown, have described it differently.⁹ Nunan claims that ESP is “an important subcomponent of language teaching with its own approaches to curriculum development, materials design, pedagogy, testing and research.”¹⁰ Dudley-Evans and St. John state that “the concerns of ESP have always been, and remain, with needs analysis, text analysis, and preparing students to communicate effectively in the tasks prescribed by their study or work situation.”¹¹ Brown cites ESP as “the role of English in a language course or programme of instruction in which the content and aims of the course are fixed by the specific needs of particular group of students.”¹² Although such definitions differ, they reveal that ESP courses focus on the needs of a group of students based on a NA. ESP courses target the present situation analysis—what the students can do with the language at the beginning of the instruction;¹³ the target situation analysis—“what the students should be able to do at the end of the instruction”;¹⁴ and the gap analysis—“what the students need to be able to do at end of the instruction (...) and what they currently can do in the ESP.”¹⁵ ESP

8 Brian Paltridge and Sue Starfield, *The Handbook of English for Specific Purposes*, 1st ed. (West Sussex: Wiley-Blackwell, 2013) 2.

9 Helen Basturkmen, *Developing Courses in English for Specific Purposes* (London: Palgrave Macmillan, 2010); James Brown, *Introducing Needs Analysis and English for Specific Purposes* (New York: Routledge, 2016); Tony Dudley-Evans and M. J. St. John, *Developments in English for Specific Purposes: A Multidisciplinary Approach* (Cambridge: Cambridge University Press, 1998); Michael Long, *Second Language Needs Analysis* (Cambridge: Cambridge University Press, 2005); Ken Hyland, *English for Academic Purposes. An Advanced Resource Book* (New York: Routledge, 2006); David Nunan, “What is Task-Based Language Teaching?,” *Task-based Language Teaching* (Cambridge: Cambridge University Press, 2004).

10 Nunan, 7.

11 Dudley-Evans and St. John, 2.

12 Brown, 5.

13 Brown, 22.

14 Brown, 18.

15 Brown, 23.

courses aim to instruct students in the language they require for their academic study or work training.

Hutchinson and Walters¹⁶ describe ESP as an approach, not a product. They explain that ESP courses are divided into two main categories: English for Academic Purposes (EAP) and English for Occupational Purposes (EOP). According to Charles, EAP is concerned with “researching and teaching the English needed by those who use the language to perform academic tasks,”¹⁷ and it has been contributing to academic discourse and translating those insights into pedagogical methods and materials.¹⁸ Dudley-Evans and St. John define it as “any English teaching that relates to a study purpose,”¹⁹ while Flowerdew and Peacock claim that EAP is “the teaching of English with the specific aim of helping students to study, conduct research or teach in that language.”²⁰ Like ESP, EAP is further categorized in areas such as English for Science and Technology (EST), English for Social Sciences Purposes (ESS), and English for Humanities Purposes (EHP). Parkinson explains the term EST by citing Halliday (1993): “EST recognizes text as scientific English because of the combined effect of cluster of features and the relations of these features throughout a text.”²¹ Concerning ESS and EHP, De Swaan²² states that those disciplines are strongly bound to language since technical terms are applied in everyday usage. Language is used to communicate globally due to the familiarity of the lexicon in any setting.

16 Tom Hutchinson and Allan Walters, *English for Specific Purposes: A Learner-Centered Approach* (Cambridge: Cambridge University Press, 1987) 16.

17 Maggie Charles, *The Handbook of English for Specific Purposes* (West Sussex: Wiley-Blackwell, 2013) 136.

18 Charles, 136.

19 Dudley-Evans and St. John, 34.

20 John Flowerdew and Matthew Peacock, “Issues in EAP: A Preliminary Perspective,” *Research Perspectives on English for Academic Purposes*, John Flowerdew and Matthew Peacock, eds. (Cambridge: Cambridge University Press, 2001) 8.

21 Jean Parkinson, “English for Science and Technology,” *The Handbook of English for Specific Purposes*, Brian Paltridge and Sue Starfield, Eds. (West Sussex: Wiley-Blackwell, 2013) 155-173.

22 Abraham De Swaan, “English in the Social Sciences,” *ALLEA Biennial Yearbook 2004. Critical Topics in Science and Scholarship* (Amsterdam: ALLEA, 2004) 135-146. https://www.allea.org/wp-content/uploads/2016/02/Swaan_English_Social.pdf.

Since EAP has been extended into more specialized areas, debates have been faced among scholars in terms of EAP instruction. Dudley-Evans and St. John state that EAP requires language instructors to teach the four language skills: listening, speaking, reading, and writing;²³ however, they must be aware of the needs students face to decide whether to place them in an either an English for General Academic Purposes (EGAP) or English for Specific Academic Purposes (ESAP) course. The former emphasizes the need to teaching skills and language that are common to all disciples, such as reading a textbook to understand main ideas; whereas the latter refers to teaching the features that distinguish one discipline from others. Students transfer the EGAP skills to apply them in the specific context; for example, writing reports for a specific department.²⁴ Charles explains that EAP has been associated with other pedagogical approaches, such as EAP and genre or EAP and corpora. “In the early 1990s, Swales (1990) and Bhatia (1993) developed a more focused methodology, which they referred to as *genre analysis*.”²⁵ Genre analysis is a “type of communicative event which has a particular communicative purpose recognized by its users, or discourse community,”²⁶ and it became an important concept within EAP courses. Genres may vary linguistically and rhetorically depending on the context, but these linguistic aspects must serve communicative and pragmatic purposes. The discourse community will play an important role since being a member involves the users employing characteristic language and genres.

However, to identify the linguistic features, the needs analyst must conduct a well-articulated NA. A NA is a process used to gather information about the population under study. The aim is to target the *present situation analysis* (the language skills the students have at

23 Yulong Li and Lixun Wang, “English for Academic Purposes. A New Perspective from Multiple Literacies,” *Word Journal of English Language* 6, 2 (2016): 10-18. DOI: <https://doi.org/10.5430/wjel.v6n2p10>.

24 Dudley-Evans and St. John.

25 Flowerdew and Peacock, 15.

26 Flowerdew and Peacock, 15.

the beginning of the ESP instruction), *gap analysis* (the discrepancy between the students' present situation and target situation), *target situation analysis* (the linguistic information that the student requires at the end of the instruction), learning needs, and rhetoric analysis.²⁷ In this process, the specificity of the language is a key component for the course development. The students require the linguistic features, specific features of the language, to be able use them in their field and understand how other linguistic features, such as sentence structure, should or must be used depending on the contexts. To discover the learners' needs, authors, such as Hutchison and Walters, have suggested identifying their "necessities (what the students has to know to function effectively), lacks (what the learner knows and does not know already), and wants (what the learner thinks he needs)."²⁸ The needs analyst must implement different strategies to collect information, such as questionnaires, interviews, focus groups, observations, among other types of instruments such us surveys. The information should be validated without disregarding the environmental analysis.

To conduct a NA, Dudley-Evans and St John²⁹ and Macalister and Nation³⁰ suggested following certain stages to create a sound curriculum. They can be summarized as follows:

- First Stage: It focuses on identifying the specific needs of the students and stakeholders.
- Second Stage: The needs analyst designs a course and syllabus based on the information gathered from the needs analysis.
- Third Stage: The instructor finds or produces his own materials to be used throughout the course.

27 Helen Basturkemen, *Developing Courses in English for Specific Purposes* (London: Palgrave Macmillan, 2010) 18.

28 John Macalister and Paul Nation, *Language Curriculum Design*, 2nd ed. (New York: Routledge, 2009) 5.

29 Dudley-Evans and St. John, 4-5.

30 Macalister and Nation.

- Fourth Stage: After producing the materials, the teaching-learning process takes place.
- Fifth Stage: The instructor designs assessments to test the student's ability. Assessment can be done before, during and at the end of the course, whereas evaluation tests the outcome of the course and the effectiveness of the materials.

Kencana and others aimed to create digital materials to upload them on the virtual campus to facilitate the learning process of the students at the Department of Geography of Universitas Hazairin (Unihaz) Bengkulu, Indonesia. They designed materials to facilitate the learning process and assist instructors.³¹ They used an e-learning platform to upload readings, texts, audios, images, among other resources to “provide the students with online teaching materials that [were] correct and in accordance with the learning objectives.”³² In the material development process for the EAP course, it was implied that the researchers followed the best practices suggested by Dudley-Evans and St John and Macalister and Nation. They first identified the population's needs. They studied the curriculum and started creating suitable materials. They applied and assessed the materials, and finally compared the results obtained from the NA at the beginning of the process with the ones obtained at the end of the instruction.

To create the e-learning materials, the researchers also followed the steps of Jolly and Bolitho's framework in Tomlinson. They explored the needs for materials; to contextualize them, they produced the materials; and they had the students use them. To collect data Kencana and others applied a test method, documentation, interviews, and questionnaires to material experts, four lecturers, and thirty students. Their findings were divided into four categories.

31 Nila Kencana, Romdani Romdani, and Aceng Rahmat, “E-learning Based Design of Teaching Materials for English as a Specific Purposes of Geography,” *Proceedings of the 3rd International Conference on Educational Science and Teacher Profession (ICETeP 2021)* (Amsterdam: Atlantis Press, 2023) 203-220. DOI: https://doi.org/10.2991/978-2-494069-19-0_22.

32 Kencana, Romdani and Rahmat, 205.

The first category shows the results from the NA. The researchers stated that students and lecturers need “appropriate teaching materials in learning English for Specific Purposes of Geography,”³³ and they implied that “students and lecturers need appropriate teaching materials to enhance the learning of English for Geography Specific Purposes,”³⁴ based on the responses to the questionnaire. Kencana and others identified the need to adjust the teaching materials to the students’ interests and learning levels. The results from the observations and interviews demonstrated that:³⁵

- 1) The existing syllabus and teaching materials for General English was applicable to all departments in Unihaz.
- 2) The preparation of the syllabus and teaching materials had not been based on the results of the analysis of the needs of students majoring in Geography.
- 3) The preparation of the syllabus and teaching materials were also not based on certain theoretical studies.
- 4) The learning objectives and achievements were available but general in nature.
- 5) The evaluations and assignments had been designed but were not specific to one department.
- 6) The competencies at each face-to-face were not described in detail.

These results reveal the need to administer a NA to target the needs, lacks, and wants of the population.

The second category provided information about the design of the e-learning based teaching materials of ESP at the Geography Department. The researchers used the *Hi-Tech* model for material development. The *H* stands for “highlighting the students’ needs;”

33 Kencana, Romdani and Rahmat, 208.

34 Kencana, Romdani and Rahmat, 209.

35 Kencana, Romdani and Rahmat, 209-210.

the *i* for “illuminating the current situation;” the *T* for “tightening the materials for the learning outcomes;” the *e* for “elevating the students’ English competences;” the *c* for “completing the materials;” and the *h* for “handling the materials a ready and safe e-learning media.”³⁶ According to the researchers, theory and results from the interviews, questionnaires, and an observation were used to develop materials and pilot them using the model.

The third category focused on having four lecturers and two experts in English learning and e-learning media assessing and validating the materials.

Based on the results of the assessment and validation of the experts, [the experts] concluded that E-learning Based Teaching Materials of English for Specific Purposes of Geography were very feasible to use which had been determined according to four respondents to be $350:447 = 78.2\%$ of the maximum value.³⁷

Moreover, Kencana and others found that the percentage of eligibility of the e-learning based instruction and material was “ $540:660 = 81\%$ of the maximum value.”³⁸ The researchers established that *E-learning Based Teaching Materials of English for Specific Purposes of Geography* had “clarity and complete plan of exercises and assignments”;³⁹ the content was in accordance with the syllabus of the Geography Department; language skills were integrated; and materials were helpful for the instructors in the learning process of the students. Kencana and others studied the effectiveness of the material designed. For them, the scores showed that having administered the e-learning materials, students increased their scores. Additionally, the results were compared with the ones obtained at the beginning of the study. Data revealed that a NA delimits curriculum design.

36 Kencana, Romdani and Rahmat, 214.

37 Kencana, Romdani and Rahmat, 216.

38 Kencana, Romdani and Rahmat, 216.

39 Kencana, Romdani and Rahmat, 214.

Other studies on the tertiary level for students of Geography have demonstrated the importance of conducting a sound NA to design EAP courses.⁴⁰ Kruk conducted a case study with tertiary level students of a master's degree in Geography in Jagiellonian University. From the NA, Kruk found a necessity for creating pronunciation-based activities for the students to improve the articulation of field-related vocabulary. Students were able to pronounce the names of places appropriately, but they had difficulty in articulating the “more sophisticated ones,”⁴¹ such as the names of “countries, large cities, rivers, deserts, capes, etc.”⁴² Marita and others applied a *Research and Development* (R&D) method in a study conducted with students at the Department of Geography at the University of Hazairin, Bengkulu. They tried to “equip the students’ [with the] ability to develop the concept of teaching English in specific and relevant [topics] related to earth sciences.”⁴³ Marita and others identified the need to create modules, syllabi, and lesson plans that helped students improve their reading skills. Banegas conducted an action research study in a Geography teaching program in Argentina. Banegas discovered the student-teachers had to “replace the ESP modules with Geography-related modules because [the authorities] felt that their knowledge of Geography was limited and that the hours allocated to ESP could be more usefully employed in strengthening the subject-specific component of their programme.”⁴⁴ He divided his study into four stages. The first one focused on “initial investigations, action, intervention, and

40 Banegas, 2018; Kencana and others, 2022; Kruk, 2016; Marita and others, 2018.

41 Mirosław Kruk, “On Teaching ESP at Tertiary Level: The Case of English for Geography. Part 1,” *Zeszyty Glottodydaktyczne* 6 (2016): 55-63. <<https://www.cceol.com/search/article-detail?id=516023>>.

42 Kruk, 59.

43 Marita Yosi, Mirna Yinita and Ade Hidayat, “English for Specific Purposes in Geography Learning,” *Advances in Social Science, Education and Humanities Research* 295 (2018): 186-187. DOI: <https://doi.org/10.2991/icetep-18.2019.46>.

44 Dario Banegas, “Learning Subject-Specific Content Through ESP in a Geography Teaching Programme: An Action Research Story in Argentina,” *English for Specific Purposes* 50 (2018): 1-13. DOI: <https://doi.org/10.1016/j.esp.2017.11.001>.

reflection-evaluation”⁴⁵ by administering a questionnaire, conducting interviews, and keeping diaries. Data was analyzed by following a thematic analysis approach. In the remaining stages, the participants centered their attention on their practicum only. Findings from the first stage indicated that two courses were necessary: English I and English II. The courses focused on physical geography and human geography respectively. In Banegas’ EAP course, he developed language-related content, provided reading strategies, and facilitated “text types and features, information structure, textual references, word classes, word formation, coherence and cohesion, discourse markers, parataxis and hypotaxis, and semantic fields.”⁴⁶ From this study, Banegas (2018) concluded that (a) language and content were integrated positively in their lessons by using the CLIL methodology; (b) motivation increased by providing authentic material and creating spaces for autonomy; and (c) action research provided positive evidence to examine ESP pedagogies and implement them in the course.

In other ESP fields, such as tourism, pharmacy, and engineering, researchers have established that the role of NA is the one determining the “what and how of the course.”⁴⁷ Alsamadani⁴⁸ asserts that the NA results enable the identification of the students’ weaknesses and strengths. NA also provides information about the best methodologies to implement in a course. Alsamadani carried out two different types of NA approaches to gather information: the target situation analysis (TSA) and the present situation analysis (PSA). His participants were ESP and subject-matter teachers and second-year engineering students at Umm Al-Qura University. Results from the NA suggested that classes were teacher-centered; in ESP lessons, productive skills were

45 Banegas, 4.

46 Banegas, 6.

47 Lynne Flowerdew, “Needs Analysis and Curriculum Development in ESP,” *The Handbook of English for Specific Purposes*, Brian Paltridge and Sue Starfield, Eds. (West Sussex: Wiley-Blackwell, 2013) 325-346.

48 Hashem Ahmed Alsamadani, “Needs Analysis in ESP Context: Saudi Engineering Students as a Case Study,” *Advances in Language and Literature Studies* 8, 6 (2017): 58-68. DOI: <http://dx.doi.org/10.7575/aialc.all.v.8n.6p.5>.

neglected. Students expressed lack of capacity to communicate in the target language when interacting in their environment. Furthermore, it was found that instructors considered the listening skill as the second most important skill to target; however, it was the least important for the students. Alsamadani claims that needs analysts must study the specific academic and professional requirements to target language skills even though some other authors have conducted research on this specific field and have established what skills are the most “important” to develop first.

In response to the need for an ESP course for vocational students of diploma three (D3) pharmacy department of Surabaya Pharmacy Academy in Indonesia, Syakur and others⁴⁹ conducted a NA by administering a survey, a questionnaire, and semi-structured interviews about the students’ learning needs. The researchers followed the *Instructional Development Model* and *ADDIE*. Suradika and others⁵⁰ explain the Instructional development model as the one “that instructional is a process that takes place systematically, and in the implementation process, there is a process of communication and interconnected interactions.” According to Russell and Murphy-Judy, *ADDIE* is an approach that “offers a systematic process to help designers organize and execute an effective workflow, regardless of the theory of learning.”⁵¹ Their data revealed that students needed English for communicating in a professional setting, applying the prescriptive rules of the language, understanding the content from readings, reports, books, and journals, and comprehending what is being said in the target language. Regarding their leaning needs, Syakur and others

49 Abd Syakur, H. M. Zainuddin and M. Afif Hasan, “Needs Analysis English for Specific Purposes (ESP) for Vocational Pharmacy Students,” *Budapest International Research and Critics in Linguistics and Education* 3, 2 (2020): 724-733. DOI: <https://doi.org/10.33258/birle.v3i2.901>.

50 Agus Suradika, Widia Winata, Dirgantara Wicaksono, and Nazifah Hasainah. “Instructional Development of Introduction to Statistics based on Dick and Carey’s Model,” *The Social Perspective Journal* 1, 2 (2022): 111-127. DOI: [10.53947/tspj.v1i2.75](https://doi.org/10.53947/tspj.v1i2.75).

51 Victoria Russell and Kathryn Murphy-Judy, *Teaching Language Online: A Guide for Designing, Developing, and Delivering Online, Blended, and Flipped Language Courses* (New York: Routledge, 2021).

discovered that pharmacy vocational students prefer using technology. The researchers suggested that instructors investigate what strategies facilitate the acquisition of the target language when implementing technology in their lessons.

In Bengkulu, vocational high schools aim to prepare competent students to enter the labor market. The study of Oktarin and others⁵² identified that tourism students were using a book that did not fulfill their necessities. Therefore, the researchers investigated the needs of English for tourism and the aim of using the textbook for their lessons. To recognize the needs, wants, and lacks, Oktarin and others administered a survey, interviewed the stakeholders and gathered documents from them. They found four main necessities for the EAP course: students needed to “(a) listen to ticket/a hotel room reservations via telephone, (b) talk by telephone about tickets/hotel room reservations, (c) read about tourism terms, and (d) write a travel package.”⁵³ To target these needs, the researchers created materials and activities related to their job-field. The development of these strategies facilitated communicative competence since the four language skills and job-related vocabulary were incorporated to meet the objectives.

In the process for creating these ESP courses, NA plays an essential role for course development. The data gathered at the beginning, during and at the end of the instruction provides information that would facilitate the learning process for the target population. There is a gap in research since little has been written about actual processes conducted by needs analysts in the field. Researchers have suggested implementing different strategies to collect the information, such as developing and applying semi-structured interviews, questionnaires, observations, and informal consultation, but they do not specify the process for them to identify what the students need, want, and lack.

52 Rezky Atri Oktatarin, Syahrrial, and Alamsyah Harahp. “Needs Analysis of ESP for Tourism Study Program at SMKN 7 (Senior Vocational School) Kota Bengkulu,” *Journal of English Education and Teaching* 3, 1 (2019): 14-28.

53 Oktatarin, Syahrrial and Harahp, 20.

If research on NAs shows the best practices to gather information, it will illustrate the goals of the course, the content, and the mediation strategies. These findings will justify whether productive, receptive, or productive and receptive skills were incorporated in the ESP courses, it will delimit the use of certain types of materials and approaches, and the different methods of data collection applied in the investigation will validate the study.

Since this is a gap in NA, particularly in the field of Geographic Sciences, this study aims to show the NA process conducted at the SGS-UNA. This contributes to the field of NA, and to ESP for geography since it shows how a NA was conducted, it describes the results from the investigation, and it provides a curricular proposal that intends to fulfill the students' needs regarding their academic and professional development.

Needs Analysis Objectives

General and specific objectives were written to delimit the purpose of the NA. This needs analysis aimed to identify the necessities of a group of students studying at the GSLP Licentiate offered by the SGS-UNA. It was essential to understand what the stakeholders needed from the ESP course, not only in terms of lexicon, but also in terms of rhetoric. The objectives below focus on the aims of the NA. Furthermore, the validity and credibility of the study are shown by outlining the process the needs analyst followed.

General Objective

To develop an ESAP course based on the data collected from the needs analysis conducted at the SGS-UNA with the licentiate students taking the GSLP major (*Ciencias Geográficas con Énfasis en Ordenamiento del Territorio* [Geographic Sciences with emphasis in Land Use Planning]) at Universidad Nacional (UNA).

Specific Objectives

- To identify the academic-related tasks SGS licentiate students carry out during their training.
- To recognize the needs, lacks, and wants the SGS stakeholders have in terms of immersing licentiate students in ESAP instruction for them to improve communicative and pragmatic skills in the target language.
- To administer five data collection instruments to determine needs, lacks, and wants that the SGS students have to immerse licentiate students in an ESAP course.
- To design a curricular proposal that covers the needs, lacks, and wants of the licentiate students in the GSLP-UNA major.

Methodology

For the purpose of this work, the methodology section develops three main phases that ensures trustworthiness. First, the sampling criteria exemplifies the type of sampling strategy used in this NA. It delimits the design of the study and the sample selected. Second, the section on participants illustrates the profile of the population. The objective is to frame their background in terms of language proficiency and academic status. Lastly, the procedure delimits the process conducted by describing the main components of the NA and pointing out the purposes of this study.

Sampling Criteria

Purposeful sampling is the type of sampling used in this investigation, and it followed a *criterion-based selection* strategy—the “*researcher creates a list of attributes essential to the study and then proceeds to find or locate a unit matching the list*”⁵⁴—to choose the

54 Sharan Merriam, *Qualitative Research. A Guide to Design and Implementation* (San Francisco: Jossey-Bass, 2009).

participants. According to Cresswell and Plano Clark,⁵⁵ a purposeful sampling “involves identifying and selecting individuals or groups of individuals that are especially knowledgeable about or experienced with a phenomenon of interest.”⁵⁶ In this study, the criterion-based selection involved:

- GSLP students who enrolled in the Licentiate⁵⁷ degree at the UNA.
- GSLP licentiate students who already passed *Inglés Integrado para Otras Carreras I* at the UNA [Integrated English for Other Majors I].
- GSLP licentiate students who already passed the *Inglés Integrado para Otras Carreras II* [Integrated English for Other Majors II].
- GSLP licentiate students who had passed the courses below:
 1. GEL400 Pensamiento Geográfico [Geographical Thinking]
 2. GEL402 Cartografía [Cartography]
 3. GEL401 Introducción a la Geografía [An Introduction to Geography]
 4. GEL404 Métodos y Técnicas de Investigación Cualitativa [Methods and Techniques in Qualitative Research]
- Students who have taken the undergraduate GSLP major at the UNA.

Participants

A total of 22 students from the SGS were contacted by email after having discussed the aim of the NA with the SGS sub-director. The total number of respondents graduated from the B.A. in GSLP,

55 John Cresswell and Vicky L. Plano Clack, *Designing and Conducting Mixed Methods Research* (Singapore: Sage, 2011).

56 Palinkas, Horwitz, Green, Wisdom, Duan, and Hoagwood, 2.

57 This university degree is between that of bachelor's and master's (or doctorate).

but only eight students answered the survey for the NA to create the population's profile. The results show that 7 students (3 female and 4 male) graduated from public high schools; whereas 1 participant (1 male) graduated from a charter school (see Table 1). Six out of 8 participants have identified their proficiency in the target language as basic while 2 claimed to have an intermediate level.

Table 1. Framing the Types of High Schools from which the Participants Graduated

	Types of High Schools		
	Public high school	Private high school	Charter school
Total	7	0	1

Only 1 participant is currently working in the area of specialization (see Table 2) whereas the remaining participants had started their first semester of the Licentiate degree at the UNA. Regarding the participants in the study, three participants work at the SGS instructors in the GSLP major, although one of them works as the sub-director.

Table 2. Framing the Students' Status

	Current Status	
	Employed as a Geographer	Studying the GSLP Licentiate
Total	1	7

Procedure

The present NA analysis followed specific guidelines in the process of data collection and data analysis to prevent bias. First, the contribution of different researchers impacted the development of the data collection instruments and their application. Lobe and others explain the requirements the researcher must follow when conducting an interview via Zoom.⁵⁸ Furthermore, Merriam describes the best ways of conducting an interview to obtain information from the participants. The author describes the interview as “the best technique to

58 Bojana Lobe, David Morgan and Kim A. Hoffman, “Qualitative Data Collection in an Era of Social Distancing,” *International Journal of Qualitative Methods* 19 (2020): 1-8. DOI: <https://doi.org/10.1177/1609406920937875>.

use when conducting (...) case studies.”⁵⁹ Merriam also clarifies the difference between sampling criteria methods to choose the population based on the research method. Lastly, Brown lists several data collection techniques and its objectives for conducting a NA. The aim is to provide an overview of the most common methods that needs analysts could implement to collect sound information for their NA.

Second, on top of including the contribution of several authors for the development and design of five data collection instruments, an expert in the field of applied linguistics reviewed and validated these instruments. This person’s feedback enhanced the credibility of the instruments to gather information for the present NA. The first instrument implemented was an *individual interview*. This was applied to two stakeholders from the SGS. A second data collection instrument used to gather information was a *survey* which served as a basis for creating the profile of the target population. Later, a *proficiency test* was developed and sent to the participants. The aim was to identify the proficiency level of the students. Before this instrument was used, it underwent to a process of validation as well. After having identified the English proficiency level of the population, the researcher scheduled a *group interview*. The objective was to get more information from the stakeholders for the curricular proposal. Last, a member checking was sent via email to validate the results from the previous instruments applied to all the participants. To publish and analyze these results, the stakeholders voluntarily accepted to be part of the investigation. No name is given to protect the participants’ identities. The communication with the participants was conducted via email. The explanation of every step to gather information was done via institutional email.

Results

The NA results aimed to describe the stakeholders’ perceptions about the use of the target language in the specialized courses at the

⁵⁹ Merriam, 88.

SGS-UNA. These results are listed in accordance with their application: individual interview, survey, proficiency test, group interview, and member checking. To find the participants for this study, a release letter explaining the purpose of the investigation and the process was sent by email. The institutional email account served as the official means of communication between the participants and the researcher.

After having received the first answers, the researcher contacted the participants of the study and started sending the instruments. However, for the researcher to send the second, third, fourth, and fifth instrument, she had to analyze the results of the instrument applied previously. Since all these instruments are different from one another, the process of analyzing the information was carried out differently. For example, for the interviews, the researcher transcribed all the information, and then compared the results to find identify the main gaps. Regarding the proficiency test, the researcher designed a rubric to assess the output. The indicators followed the descriptors of the CEFR. For the listening and reading comprehension skills, the researcher coded the system to give the correct response at the end of the test. The results from the survey provided statistical information. It was analyzed from a scale of 1 to 100 in terms of percentages. For member checking, the results provided qualitative and quantitative information. Statistical information was analyzed on a 1 to 100 scale in terms of percentages, and the qualitative information was compared and published using pseudonyms in the results.

Individual Interview

Two individual interviews were administered to two participants of the SGS-UNA. The first interview was administered to a professor from the GSLP majors. The results show that students lack instruction in English for specific purposes. When professors ask students to read an article or chapter of a book in English, their understanding of the reading does not correspond to the standards the university established for students who have taken the Integrated English courses.

During the interview, Participant 2 stated that students from the major have difficulties understanding scientific articles and book chapters in the target language. She emphasized that students always complained about not having the skills necessary to complete academic tasks in English. For her, there is a mismatch between what is offered and the language skills students have. Participant 2 believes that “courses given by the School of Literature and Language Sciences are supposed to help students improve their language skills for them to comprehend and produce in the target language.” Furthermore, Participant 2 claims that not having EAP courses is a drawback for the major because students must understand what is being read or heard, and speak and write when requested to. Lastly, Participant 2 emphasized that another factor that could affect involving the students in EAP courses is that most of the professors at the school do not speak English; therefore, it may cause them to assign “readings, articles, or book chapters in English, and the students use the translator to try to understand the content.” “Neither the professor nor the student has the skills to go over texts in a language different from Spanish.”

Participant 1 added that his students have shown lack of technical vocabulary in the target language and lack of reading comprehension skills when given readings in English. He claimed that students taking the major should be able to write reports in the English language. Students should be able to communicate with experts around the world. At times their reports must be sent to other places, so they must interpret the information accurately. For this participant, geographers must use vocabulary related to their discipline, comprehend academic texts, and write reports in English.

Conversely, Participant 2 outlined a learner’s input profile and optimal output profile. She stressed the importance of understanding academic contents such as the “object of Study, the different methodologies that examine the object of study, which differ depending on the branches, and the importance of comprehending technical vocabulary” (e.g., territory, region, geographic space, planning unit,

and land use planning). The participant explained that there is specific vocabulary for each any branch; however, for students to recognize and comprehend what those branches are, they should know the basics. Concerning the professional profile, students always must work in teams because geography is a holistic science. Students should manage “special information, know how to use technical equipment, be socially and environmentally responsible, have professional ethics, and plan in such a way that it is sustainable, in harmony with nature.” It is essential for students to know how to relate environmental and social aspects in a geographic space, and students must keep in mind that physical geography and social geography cannot be separated from one another. Participant 2 highlighted that students must understand that since Geographic Sciences is holistic, it always seeks benefits for human beings.

Survey

The objective of the survey was to create a profile of the population and start identifying the population’s needs, lacks, and wants for the curricular proposal. Through the online survey, participants in the research provided data about their personal background, overall information about their major, and English experience. The first set of analyses indicated that the eight participants had graduated with a bachelor’s degree in Geographic Sciences (UNA). This is required for the Licentiate degree. However, since they live in different areas of the country, they had graduated from different high schools, and therefore, their instruction in the English language varies. Seven participants (3 female and 4 male) had graduated from public high schools whereas 1 male participant had graduated from a charter school. Of the study population, only 1 participant is currently working as a geographer.

The second set of analyses showed that students, as geographers, are required to work in teams since their major is *interdisciplinary*. Students should be able to use geographic information systems (GIS) to create projects with communal, public, and social benefits and to

write reports related to physical and/or social drawbacks. Strong evidence of understanding technical vocabulary in that specialty, both in English and Spanish, is essential for the informants when conducting research, writing reports, and exchanging findings. Furthermore, it was found that the 8 participants must reinforce skills to work properly as geographers. They claimed that they must know how to use software, such as SIG and Qgis, to create maps. They must improve teamwork skills and enhance reading comprehension skills when reading in English. Five out of 8 participants stated that professors in their major assign book chapters and scientific articles for them to read. Since SGS students have not developed skills to understand those texts, their learning process is affected.

The last set of analyses revealed the necessities, wants, and lacks of the subjects in terms of the English language. Among the experience they have encountered with the language, 5 students out of 8 mentioned that during the previous 4 to 5 years of study, they have only taken the first course (Integrated English for Other Majors I). This course must be taken in the first semester of the major. The remaining participants claimed that they have studied in different language academies to improve their communicative competence. Additionally, all participants agreed that learning vocabulary related to their area of specialization and improving reading comprehension skills are what they need the most since it would help them to comprehend theoretical and scientific information. The respondents pointed out that living in a globalized world requires specialists to communicate using not only formal English, but also the jargon required to explain findings to other experts. Concerning the areas of improvement in terms of the language, 4 participants commented that they must improve their speaking skills, and 4 claimed that they must improve written and reading skills. The participants explained that they feel motivated to take the ESAP course because they believe that it will help them use the language academically and professionally, increase their academic-related vocabulary, and produce the language for their specialty.

Proficiency Test

All the students taking a major at the UNA register in any of the four courses called *Inglés Integrado para Otras Carreras* [Integrated English for Other Majors] except students taking Veterinary Medicine and Computer Science,⁶⁰ who actually do take specialized English courses. The former courses follow the standards of the Common European Framework of Reference for Languages (CEFR). According to the Council of Europe, the CEFR

describes in a comprehensive way what language students have to learn to do in order to use a language for communication and what knowledge and skills they have to develop so as to be able to act effectively. The description also covers the cultural context in which language is set. The Framework also defines levels of proficiency which allow students' progress to be measured at each stage of learning and on a life-long basis.⁶¹

By following CEFR standards, it is expected that students taking the GSLP major would acquire an A1.1 and A2 level at the UNA to “strengthen the foundations in learning the English language by integrating the four language skills: listening comprehension, oral expression, reading and writing.”⁶²

Students who register in Integrated English for Other Majors I and II are expected to (a) “show a basic repertoire of simple structures related to personal data and everyday situations with a professional level vocabulary concerning different careers,”⁶³ and (b) “communicate fluently and lexically-grammatically cohesively on academic and professional topics with a low-intermediate degree of complexity,”⁶⁴ as

60 Universidad Nacional, “Cursos de Servicio,” *Escuela de Literatura y Ciencias del Lenguaje*, 2022, <<https://www.literatura.una.ac.cr/doc-phoca/category/25-cursos-de-servicio?start=20>>.

61 Council of Europe, *Purposes of the CEFR*, Common European Framework of Reference for Languages (CEFR), 2022, <<https://www.coe.int/en/web/common-european-framework-reference-languages/uses-and-objectives>>.

62 Universidad Nacional.

63 Universidad Nacional, 1.

64 Universidad Nacional, 1.

the course syllabus suggests. GSLP students, therefore, are expected to have acquired these skills by the end of their five-year program.

For the purpose of this NA, GSLP students were asked to take a general proficiency test following the objectives of the course Integrated English for Other Majors I. A proficiency assessment is

based on items drawn from the language as a whole rather from the content of a particular course. It tries to measure a learner's language knowledge in relation to other students who may have studied different courses, or in relation to areas of language knowledge that are based upon an analysis of language.⁶⁵

The assessment was divided into four main sections. The first section was on listening comprehension. The students were asked to listen and watch a video and answer some questions. The second section involved students choosing one of the three topics given and describing their personal situation in an audio for two minutes. The students used an online platform to record the audio. The students were asked to record an impromptu speech. If the instructor noticed they were reading, they were asked to record again. In the third part of the assessment, students read a reading and answered some questions, as they did in the listening part. Lastly, the students wrote an eighth-sentence paragraph. They were asked to write one topic sentence, six supporting sentences, and one concluding sentence for each paragraph. The speaking and writing sections were assessed by using a rubric to guarantee objectivity.

The results from the proficiency test suggested that students⁶⁶:

- Show listening comprehension at a basic level by applying strategies such as capturing the essence of what is said.
- Show reading comprehension of basic texts to identify central and supporting ideas.

⁶⁵ Macalister and Nation, 129.

⁶⁶ Universidad Nacional, 1.

- Communicate in written form using basic composition techniques at the sentence level.
- Properly use basic grammatical structures that are described in the syllabus contents.
- Give a simple description or presentation of people, living or working conditions, daily routines, likes/dislikes, etc., such as a short series of simple phrases and sentences linked into a list.

Group Interview

Based on the data collected from the group interview, it was established that the participants need the EGAP course for three main reasons. Since they consider their field as multidisciplinary, they believe that interpreting and learning how to identify main ideas from scientific articles could benefit them. Student 1 said,

when we read in English, what happens is that the vocabulary is very technical. The vocabulary changes according to the discipline, among them: The Humanistic View and the Physical View. (...) The concepts are very technical, and it is necessary to know how to interpret these texts.

Students 2, 3, 4, and 5 supported that assertion. Student 5 added that they must write reports, and sometimes, they have to use *Google translator* or look for a translation of the document to understand what is being said. This statement supports what Participant 1 claimed: Students taking the GSLP major must write reports; English literature is hardly ever consulted to enrich their written projects. In general terms, the reading skills must be improved.

A second necessity focused on improving the prescriptive rules of the target language to write reports. According to Student 1, “there are three written modalities: the essay format, the scientific journal (the format will vary depending on the journals’ publication manuals), and the final graduation project format.” All the reports follow guidelines given by the

professor of the course or the school itself. According to the students, the reports always have an introduction, methodology, results, discussion, conclusion, and references. These participants believed that improving reading comprehension skills and understanding and using the correct jargon will help them write reports in the target language.

Another significant finding from the interview highlighted the need to communicate what was read or written for an oral speech. Student 3 said: “The aim is to communicate with teamwork, apply the corresponding jargon [technical terminology], as when speaking with a civil engineer, or something specific about the major’s contents.” Student 1 believed that they should be able to “present a specific topic, as a written report, based on the fields’ specific terms.” These results support what Participant 2 claimed: Speaking is another skill that needs to be fulfilled so that “we are able to communicate effectively with peer experts in the field of study. For us, applying the jargon is necessary.” Students could speak with scientists from other countries.

Member Checking

Results demonstrated similarity between the data from the individual interviews, survey, and group interview. GSLP students have externalized a need for taking an ESAP course focused on the productive skills (speaking and writing). They explained that they must work with different people, such as cartographers and chemists from various Institutions and countries and fields. Their communication should be clear, and they should incorporate technical vocabulary. Nevertheless, to communicate with these people clearly, prescriptive rules of the language must be followed to produce well-structured sentences.

The participants reported that the productive skills must be targeted in their classes; however, acquiring skills to interpret scientific articles or book chapters in the language is essential for them. Table 3 shows that all participants believe that this is a necessity. Among the topics the students expect to review are Chemistry, Geomorphology, Geology, Economics, Climatology, and Ecology.

Table 3. Framing the Students' Reading Necessities

	Is it necessary to incorporate reading into your ESAP course?	
	Yes	No
Total	100%	0%

From the group interview, the participants mentioned the United Nations (UN) and the *Journal for Administration and Economy* (PANEL) as the main sources they consult for their reports. However, it was found that some other resources, such as those of the Food and Agriculture Organization (FAO) and National Oceanic and Atmospheric Administration (NOAA) are reviewed by other students (see Table 4).

Table 4. Reading Resources Consulted by Studentes

	What are the most consulted sources for reading in academic English?
Total	100%
UN	42.75%
PANEL	32.25%
FAO	12.5%
NOAA	12.5%

Overview of Curricular Proposal

The results of the NA lead to the development of a curricular proposal. This proposal contains three modules, and the main contents are Introduction to Geography, Cartography, Population, Climatology, Meteorology, Geoscience, and Cultural Geography. The main language components focus on language through learning. This course is intended to last two semesters since the course is divided into three modules focusing on productive skills.

To identify the content, the approaches to language teaching, types of assessment, and other elements for this curricular proposal, the researcher studied the results of the NA. Indeed, the NA provided information about the students' needs, lacks, and wants. It was found that students require a language specialist in an EAP field to learn

the language through learning. Students need to “carry out active involvement in the language itself and for analyzing both content and language and for higher order thinking (...) which allows [them] engage in cognitive processes to use knowledge more dynamically.”⁶⁷ Having students read without previous instruction pointed to a gap in the learning process. Furthermore, developing knowledge of academic sentence structures for written and oral production are proposed for this population. The identification of these language features required the needs analyst to be aware of the most consulted sources for developing the content of the curricular proposal. Therefore, PANEL, UN, FAO, NOAA were used as a basis. Regarding the consultation of commercial sources, such as additional books on geographic sciences, none were consulted to satisfy the students’ needs since it contradicts what a NA is; that is, a process which a needs analyst follows to gather information about a target population to provide them with the required skills for them to produce the language as expected based on their specific field of study.

In this curricular proposal, licentiate SGS students would be able to use the knowledge learned in the first two years of their studies when eventually taking the ESP course. In the first modules, students would learn how to recognize information from scientific and academic texts using different reading strategies, such as making predictions and inferences, or organizing information. With a graphic organizer, the student would be able to outline the text for better comprehension. This would help them understand the information and describe what they read by identifying specialized vocabulary. Students would also use the text to (a) identify concepts, (b) delimit the meaning of a concept depending on the context, (c) highlight linguistic phrases and/or grammatical structures, and (d) apply the knowledge orally and in writing.

In the second module, students learn to write a three-paragraph descriptive essay. Since this is an ESP course where the average student

⁶⁷ Damaris Castro-García, *Three Forms of Bilingual Education: Immersion, Dual Language and CLIL* (Heredia: Ediciones Escuela de Literatura y Ciencias del Lenguaje, 2017).

has an A1-A2 level according to CEFR standards, the paragraphs will be no longer than eight sentences. Although throughout the course oral production in the target language is emphasized, in the last module, students will explain subtopics related to geography, create activities, and justify their thoughts in the target language. The role of the ESP instructor is to provide feedback when necessary and enable the students to become responsible for their own learning process.

Concerning the approaches to be implemented, the instructor can use *Content and Language Integrated Learning (CLIL)* and the *Action-Oriented Approach (AoA)*. The first is based on learning the language of specialization through different activities where the student organizes the content around the information or themes. The objective is to have the students acquire the language and learn content from research in the field—“a dual focus on language and content”⁶⁸—so that they can use it in a specific context. The materials are adapted according to the students’ necessities, and “the language objective does not aim for native-like proficiency.”⁶⁹ The second focuses on organizing learning “through realistic and unifying scenarios, spanning several lessons and leading to a final collaborative task/project.”⁷⁰ The texts are authentic and the activities favor language production (both oral and written), language reception, interaction, and mediation of concepts and/or communication. The main objective of this course could be summarized as follows: *At the end of the course, the student will be able to produce oral and written research reports by applying prescriptive rules of the target language and using specialized vocabulary at a basic level in academic activities.*

There is evidence that a NA course for Geographic Sciences at the UNA would benefit the learning process of the students and integrating an ESP course would facilitate targeting their needs.

68 Castro-García, 69.

69 Castro-García, 69.

70 Council of Europe.

Conclusion

On one hand, the results from this NA suggested that creating ESAP courses for university students is necessary since they provide students with opportunities to apply field-related knowledge in the target language. Here, the GSLP students suggested that they need an ESAP course that focuses on speaking and writing as the main language skills for them to report on their investigations both orally and in writing. Reviewing basic grammatical structures would also benefit their production. In the courses of the major, besides going into the field to collect data, students claimed that reading scientific articles or book chapters to support their investigation was essential. However, they claimed to be lacking reading skills to comprehend what was being read in the target language. They believed that knowing the specific technical terminology and learning how to identify the main information from a text would simplify their learning process. For the content of the course, the participants mentioned that chemistry, geomorphology, geology, economics, climatology, and ecology were the main topics they read. Therefore, these contents were used for the development of the curricular proposal described above.

On the other hand, previous studies on NA have focused on stating the results of the NAs. Relatively little research describes the process which was carried out, and that justifies the application of certain procedures. Most NAs conducted in the field of geography have only described the *outcomes* of the NAs. This study was innovative since it was not limited to discussing the NA outcomes. It described the process by stating the NA objectives, the methodology used, the main literature consulted, and a justification for a curricular proposal. Regarding validation, all the instruments and the results were authenticated by an expert in the field and the stakeholders respectively. This strengthened the validity and reliability of the study. Although these findings are promising for future research

in NA and applied linguistics, they also suggest the importance of the making the NA process itself more visible in other fields of study, such as tourism, engineering, or medicine. Research on NAs requires not only the results from the instruments applied, but also a description of the process itself.

