A Needs Analysis on the First Year Undergraduates' Academic Literacy Course in the Faculty of Science, University of Kelaniya

H. B. Hirushika Pravini

University of Kelaniya, Sri Lanka, January 2024

Abstract

This paper presents a comprehensive analysis of the Academic Literacy (ACLT) course at the University of Kelaniya, aiming to identify areas for improvement and provide evidence-based recommendations. The study employs a mixed-method approach, utilizing questionnaires and semi-structured interviews to gather data from both undergraduate students and ACLT course lecturers. The results reveal that while students generally express satisfaction with the ACLT course in enhancing their academic literacy skills, there are significant challenges and discrepancies in aligning course materials with diverse disciplines within the science faculty. The study highlights the need for tailored course materials, discipline-specific writing instruction, and more practical activities aligned with students' degree programs. Additionally, students express a preference for engaging lecture materials, shorter lecture durations, bilingual instruction when necessary, and diverse assessment methods to increase their engagement and participation. Implications of the study include recommendations to enhance the ACLT curriculum by diversifying instructional strategies, revising assessments, and promoting interactive learning experiences. These recommendations aim to address the diverse needs and expectations of students within the science faculty, ensuring the ACLT course remains relevant and effective in preparing students for academic success and future professional endeavors. Regular evaluations and adaptations based on emerging academic requirements are emphasized to maintain a supportive and dynamic learning environment. This study contributes to the broader research field by providing insights into the challenges and best practices associated with academic literacy instruction in higher education, particularly within science faculties. By identifying areas for improvement and offering evidence-based recommendations, this research not only informs curriculum development and instructional practices at the University of Kelaniya but also offers valuable insights and guidance for similar institutions worldwide seeking to enhance their academic literacy programs. The following are appended: Need Analysis for Undergraduates, Interview Questions for Undergraduates, and Interview Questions for Lecturers, along with references, tables, graphs, and exhibits to provide comprehensive insights into the ACLT course at the University of Kelaniya.

Keywords: Academic Literacy, Mixed-method approach, Curriculum Development, Higher Education, Instructional Practices

Introduction

There has recently been a heightened scholarly interest in needs analysis within the context of English language learning. Many academics incorporate needs analysis into classroom evaluations as a component of program assessment studies. The principal objective of needs analysis is to comprehend the requisite modifications needed to enhance the curriculum through specific content delineation in the field of English language learning. The analysis of English language needs for students is primarily conducted to gain profound insights and extensive input concerning the present and future requirements of language learners. This involves considering perspectives from various sources, including subject teachers, as well as current and former students. The objective is to make informed decisions regarding the goals and objectives that a new curriculum should address, ensuring that the curriculum content aligns as closely as possible with the needs of the students (Cowling, 2007).

The course, Academic Literacy (ACLT) is a course provides by the Department of English Language Teaching at the University of Kelaniya for the first-year undergraduate enrolled in the faculty of science. This mandatory course is intended for students pursuing various disciplines within the Science Faculty, including Electronics and Computer Science (BECS), Bio Science (BS), Management and Information Technology (MIT), Physical Science (PS), Applied Chemistry (APCH), Physics and Electronics (PE), Environment Conservation and Management (ENCM), Industrial Management (IMGT), Sport Science (BSSS), and therefore, approximately a thousand students undertake this course annually. Scheduled in the first semester of their academic year, the course is allocated 3 credits, comprising 45 hours of theoretical instruction and 105 hours of independent learning. The instructional format involves three hours of weekly sessions conducted over a 15-week period.

The primary objective of this course is to afford students the opportunity to enhance their academic literacy skills, essential for their English medium higher education. Consequently, the designated learning outcomes of the course are delineated as follows.

1. Identify and apply writing mechanics to construct grammatical and meaningful sentences.
2. Use appropriate vocabulary learning strategies to build general and specific academic vocabulary independently.
3. Identify reliable sources for academic reading/ academic writing.

4. Use reading strategies to read simple, discipline-specific academic texts efficiently, effectively and critically.
5. Analyze assignment questions to develop answers effectively.
6. Demonstrate the ability to use the writing process to construct descriptive/argumentative paragraphs coherently.

The attainment of the aforementioned learning outcomes delineated the structure of the course content, which encompasses nine lessons. The course is designed to cover topics such as writing mechanics, both general and specific academic vocabulary, as well as strategies for vocabulary acquisition. Furthermore, the curriculum includes instruction on the academic writing process, scientific style in academic writing, strategies for effective academic reading, cultivation of critical thinking skills, comprehension of assignment questions, planning of articulate responses, and the development of persuasive arguments along with the organization of coherent paragraphs. Thus, this comprehensive course structure aims to equip students with a robust foundation in academic literacy, fostering the essential skills requisite for success in their English medium higher education endeavors.

This course employs both continuous and final assessment strategies. The continuous assessment component is comprised of three evaluations, collectively contributing 50% to the overall grade. The initial assessment, accounting for 20%, centers on abstract writing. The second assessment entails the maintenance of a portfolio, encompassing the completion of two selected activities from each lesson, accompanied by reflective writing for each lesson, and carries a weightage of 20%. The third assessment, constituting 10%, is a quiz. The final assessment, carrying a substantial weightage of 50%, is a closed-book examination scheduled at the conclusion of the semester. Thus, the combination of continuous and final assessments serves to comprehensively evaluate students' mastery of the course content, ensuring a well-rounded assessment of their academic literacy skills.

The classrooms comprise a diverse mix of both female and male students enrolled in the same degree programme. Each classroom accommodates a minimum of 45 to a maximum of 70 students. Notably, these classrooms exhibit heterogeneity across dimensions of religion, ethnicity, and socio-economic backgrounds. Predominantly, the students' primary language of communication is Sinhala; however, a notable presence of Tamil-speaking students contributes to linguistic diversity within the class. Additionally, there is observable variability in the students' proficiency in the

English language, given the absence of a placement test conducted prior to enrollment. In this inclusive and diverse learning environment, the varied backgrounds and linguistic proficiencies contribute to a dynamic academic setting that encourages cross-cultural understanding and collaboration among students.

The primary rationale for selecting ACLT for the current needs analysis stems from the valuable insights provided by students who have undergone the ACLT course for end-semester feedback. Analysis of end-semester course feedback revealed prevalent negative sentiments among students, with some expressing dissatisfaction over the course's perceived failure to address crucial needs integral to their degree-related reading requirements. Criticisms extended to the perceived lack of appeal in lectures, attributed to challenges in comprehending verbal instructions delivered in English. Furthermore, students advocated for a shift in teaching methodology, emphasizing the incorporation of engaging activities. Consequently, this study aims at initiating a comprehensive course evaluation and needs analysis to assess the efficacy of the course, and to explore avenues for future enhancements in ACLT's curriculum development. In this regard, data for the need analysis will be systematically gathered from students who have recently completed the ACLT course and the lecturers who facilitated their instruction. This approach will ensure the acquisition of timely and pertinent information, fostering a comprehensive understanding of the course's effectiveness and areas requiring improvement.

In conclusion, this overview presented encapsulates key elements of the Academic Literacy (ACLT) course at the University of Kelaniya, highlighting the course's structure, learning objectives, and assessment approaches, underscoring the imperative for a comprehensive evaluation. Thus, this study aims to address gaps identified through student feedback, contributing to the continual improvement of academic literacy education for first-year undergraduate students in the Faculty of Science.

Literature Review

2.1 English Medium Instruction

English medium instruction (EMI) has become a prevalent practice in higher education globally, gaining popularity over the past two decades (Galloway, 2020; Kao & Liao, 2017). This trend is

evident in Europe, where English has established itself as the dominant language in higher education (Coleman, 2006), extending to non-Anglo-American countries as well (Byun et al., 2011). Candlin (1991) contends that English, initially a second language for most of the world's population, has progressively evolved into the international language for various domains, including business, commerce, science, technology, and international relations. This extends to professional interactions, such as health practitioners' or educators' meetings, often conducted in English, despite being a second language for many participants.

Recent evidence indicates a surge in the popularity of EMI in universities situated in non-English-speaking countries (Coleman, 2006; Costa & Coleman, 2013). Notably, EMI is extensively employed in science, technology, engineering, and mathematics (STEM) disciplines (Galloway, 2017). In recent years, Asian countries, including Japan, Korea, China, and Taiwan, have actively fostered an international academic environment by introducing EMI degree programs (Kao & Liao, 2017). Thus, the surge in English medium instruction (EMI) reflects its pivotal role in shaping a globally interconnected higher education landscape, transcending linguistic barriers and fostering international academic collaboration.

2.2 Academic Literacy

The importance assigned to academic literacy courses is apparent in the incorporation of English medium instruction (EMI) courses, which are anticipated to play a crucial role in equipping students with the skills necessary to excel in discipline-specific writing and emerge as proficient professionals (Lillis & Turner, 2001). Academic literacy, a term explored by various researchers such as Kaburise (2012), and Leibowitz (2001), encompasses differing perspectives. The discussion on academic literacy seems to gravitate towards two poles. On one end is the skills-based approach, treating academic literacy as discrete skills that can be taught independently (Bachman & Palmer, 1996). Conversely, the New Literacies Studies, associated with scholars like Gee (2008), Leibowitz (2001), Boughey (2000), Lea and Street (1998), emphasizes the social and cultural aspects of literacy practices, acknowledging the existence of multiple literacies in diverse contexts.

Taking a more balanced stance, Van Dyk and Van de Poel (2013) define academic literacy as the ability to use language and cognitive skills purposefully and contextually. This perspective recognizes the contextual and cultural nature of literacy practices while acknowledging the

acquisition of specific abilities, whether generic or subject-specific, essential for academic literacy. Addressing a criticism of the New Literacies Studies regarding the lack of clarity in real-world application and curriculum design, this view provides a more practical understanding (Van Dyk & Van de Poel, 2013, p. 50).

Aligned with Kern's socio-cognitive framework, academic literacy involves linguistic, cognitive, and sociocultural/psychological dimensions (Kern, 2000). Kern argues that literacy encompasses language use, reflection, self-reflection, problem-solving, cultural knowledge, conventions, collaboration, and interpretation. This comprehensive perspective emphasizes the multifaceted nature of academic literacy, encompassing not only language skills but also cognitive and sociocultural dimensions.

2.2.1 Academic Literacy Courses in the Natural Sciences

Limited research exists on the specifics of discipline-specific academic literacy courses, particularly in the natural sciences. Noteworthy efforts in the field of science and technology have been reported in studies discussed below.

Van Dyk et al. (2011) delve into the Scientific Communication Skills course, employing a comprehensive, discipline-specific approach. This standalone course, presented to first-year students in groups of 35 to 50, spans two hours weekly. While the first semester emphasizes reading abilities and the second focuses on writing, integration of skills is maintained throughout. The course incorporates listening, speaking, and cognitive abilities. It employs authentic science texts and addresses key aspects such as information gathering, analysis, organization, and judgment. Noteworthy elements include interactive reading processes, text organization at micro- and macro-levels, language and scientific style requirements, effective referencing strategies, and critical analysis through discussions, group work, peer assessment, and Writing Centre visits.

Fouché (2009) outlines a series of academic literacy workshops tailored for first-year students in the University of South Africa's Science Foundation Programme. Spanning a semester, these workshops, conducted over 23 three-hour sessions, cover various academic literacy abilities and genres, drawing from diverse scientific subjects. Topics encompass vocabulary, sentence writing, contextual use of scientific terminology, academic reading, paragraph and laboratory report

writing, as well as critical skills like paraphrasing, summarizing, visual literacy, note-taking, and synthesizing information.

These approaches reveal commendable efforts to address the specific needs of natural science students. Van Dyk et al.'s (2011) Scientific Communication Skills course integrates key skills seamlessly but emphasizes a broader set of abilities, acknowledging the importance of reading in the first semester and writing in the second. However, a potential critique could be the challenge of maintaining balance and depth across varied skills. Fouché's (2009) workshop series, on the other hand, covers a comprehensive range of literacy abilities but may face challenges in maintaining consistency across the diverse scientific subjects it draws upon. The effectiveness of both approaches would benefit from ongoing evaluation and refinement to ensure a well-rounded and impactful academic literacy experience in the natural sciences.

2.3 Needs Analysis

Various educational perspectives have offered definitions of needs analysis, and a comprehensive understanding of these definitions is essential for further exploration of the subject. Al-Hamlan (2015) defines needs analysis as a specific foundation for the future development of academic activities tailored to a specific group of students. According to Richards, Platt, and Weber (1985, as cited in Brown 1995, p.35), needs analysis is characterized as "the process of determining the needs for which a learner or group of learners requires a language and arranging the needs according to priorities." This analysis serves as the initial step towards the refinement and enhancement of teaching materials, learning activities, tests, and assessment strategies.

The dimensions of needs analysis can be viewed from three perspectives: 1) situation needs versus language needs; 2) subjective needs versus objective needs; and 3) learning process versus linguistic content (Brown 1995, pp.40-42). These dimensions exhibit close interrelation. Similar to Nunan (1988), Berwick categorizes needs into objective and subjective needs. Objective needs are derived from various real data about students, encompassing their language use in authentic contexts, current language proficiency, and challenges. On the contrary, subjective needs pertain to learners' mental and emotional requirements in the learning environment.

Brown (2016, p.12-17) introduced a novel taxonomy of needs, categorizing them based on perspectives: a) Democratic view (reflecting the desires of the majority of learners); b)

Discrepancy view (identifying deficiencies and requirements); c) Analytic view (determining elements that learners should next acquire based on theory and experience); and d) Diagnostic view (identifying elements that, if absent, cause the most significant drawbacks). The underlying philosophy of this needs analysis is characterized as the "democratic philosophy," directing the investigation to collect data regarding the anticipated changes or learning that are most desired by the target group (Brown 1995, pp.38-39).

Scholars such as Hutchinson and Waters (1987), Nunan (1988), Brindley (1989), Brown (1995) concur that needs analysis holds a pivotal role in both English for Specific Purposes (ESP) and general English course design. Hutchinson and Waters (1987) assert that the awareness of learners' needs is a distinguishing factor between ESP and general English. Consequently, needs analysis emerges as a fundamental aspect of ESP course design, with Graves (1999) and Belcher (2009) suggesting its integration into teaching practices. In terms of ESP course constraints, Strevens (as cited in Richards & Rodgers, 2001) emphasizes that needs analysis confines ESP courses to specific content covering distinct language skills, vocabulary, grammar forms, language functions, themes or topics, and communicative needs.

2.3.1 Models and approaches related to Needs Analysis

The scholarly discourse encompasses diverse models of Needs Analysis, among which notable paradigms include Munby's sociolinguistic model (1978), Hutchinson and Waters' learning-centered approach (1987), and alternative learner-centered methodologies proposed by Berwick (1989) and Brindley (1989). Munby's influential sociolinguistic model, crafted in 1978, specifically serves to delineate the content parameters of purpose-specific language programs.

Munby's sociolinguistic model (1978) delineates a comprehensive profile of communication needs, encompassing elements such as communicative events (e.g., discussing routine tasks), purposive domains (e.g., educational contexts), communication medium (e.g., spoken language), mode (e.g., dialogue), communication channel (e.g., face-to-face), communication setting, primary communicators, interlocutors, dialect, attitudinal tone (e.g., informal), subject content, and requisite English proficiency levels. Despite the model's richness in detail, West (1994) has critiqued its impracticality, inflexibility, complexity, and time-intensive nature. Notably, the model has been faulted for its omission of needs dependent on human variables, and the absence

of the learner's perspective is highlighted as a weakness, illustrating a limitation in accommodating individual voices within the analysis.

Hutchinson and Waters (1987) contribute to ESP by introducing the learning-centered approach. This approach contends that existing methodologies overly emphasize language needs, prompting Hutchinson and Waters (1987) to advocate for a greater focus on understanding how learners engage in the learning process. The learning needs approach is posited as the most effective means to guide learners from their initial state to the intended target situation. In this context, the term "target needs" refers to the actions learners must undertake in the target situation. Hutchinson and Waters (1987) categorize these learner needs in the target situation into three distinct groups: necessities, lacks, and wants. Within the learning-centered approach, Hutchinson and Waters (1987) propose a continual assessment of needs through ongoing Needs Analysis, emphasizing the imperative of regularly evaluating and reevaluating learner requirements throughout the learning journey. To address this objective, Brown (2009) presents a methodical, three-step approach that involves making fundamental decisions regarding the Needs Analysis, collecting pertinent information, and subsequently applying the gathered data. The inherent flexibility of this approach, along with its capacity for ongoing data collection and utilization, aligns seamlessly with the present study's requirements. Consequently, this methodological framework emerges as the central methodology adopted for the study.

2.4 Academic Literacy in Sri Lankan Context and Need Analysis

Within the Sri Lankan context, a scarcity of research exists concerning need analysis in Academic Literacy. De Silva and Devendra (2014) delved into the needs and expectations of undergraduates enrolled in an English-medium degree program, their second language (L2), prior to their participation in an English for General Academic Purposes (EGAP) course. The investigation revealed that the students' identified needs span academic, occupational, and social dimensions, all anticipated to be met through the subsequent EGAP course. Mahawatta and Rassool (2021) investigated the academic literacy in Sri Lankan Higher Education. The results of the study reveal a notable lack of awareness regarding the concept of academic literacy among stakeholders, and even when awareness exists, insufficient attention is directed towards it. However, the current study, distinctively, focuses on the evaluation of an Academic Literacy module provided to science

undergraduates while searching for their needs, lacks, and wants in the Academic Literacy module. Consequently, this research aims to conduct a comprehensive course evaluation and needs analysis of the course titled Academic Literacy (ACLT) at the University of Kelaniya, exploring pertinent inquiries that address the distinct dynamics of the academic and linguistic requirements within this specific context.

Methodology

3.1 Research Design

This mixed-method study encompasses a randomly selected sample, aiming to elucidate the needs, lacks, wants and perceptions held by both undergraduates and lecturers regarding the course ACLT offered by the Department of English Language Teaching.

3.2 Study Setting

The data for the present study was collected from the Faculty of Science of the University of Kelaniya. The primary emphasis of the researcher centered on the course Academic Literacy (ACLT), which is a credit contributing GPA first year, first semester course offered by the DELT for the first-year undergraduates of the Faculty of Science.

3.3 Population and Sample of the Study

The target population, as defined by Burns and Grove (1997, p.236), encompasses the entire group of respondents meeting specific criteria. Dudley-Evans and St. John (1998), along with Richards (2001), posit that need analysis information can be derived from distinct participant groups. Consequently, the target population for this study comprises first-year undergraduates from the disciplines of Electronics and Computer Science (BECS), Bio Science (BS), Management and Information Technology (MIT), Physical Science (PS), Applied Chemistry (APCH), Physics and Electronics (PE), Environment Conservation and Management (ENCM), Industrial Management (IMGT), Sport Science (BSSS) within the Faculty of Science at the University of Kelaniya. Additionally, English Language Teaching (ELT) lecturers responsible for instructing the Academic Literacy (ACLT) course for these disciplines are included. These two participant groups were selected through random sampling, and the sample size was determined considering their availability and willingness to engage in the study.

The study specifically involved 50 undergraduates (both male and female) who recently completed the ACLT course during the first semester of the academic year 2021/2022. The selection of recent ACLT course completers aimed to capture their current perceptions of the course. Furthermore, two ACLT course lecturers participated, providing insights for validation and recommendations concerning the future development of the course. It is crucial to note that gender did not play a significant role in the selection process. Thus, the scope of the study is delineated as outlined below.

Table 1

Scope of the study

Category of participants	Sample size
Electronics and Computer Science (BECS)	5
Management and Information Technology (MIT)	4
Bio Science (BS)	5
Physical Science (PS)	6
Sport Science (BSSS)	4
Applied Chemistry (APCH)	10
Physics and Electronics (PE)	6
Environment Conservation and Management (ENCM)	5
Industrial Management (IMGT)	5
ELT Lecturers	2

3.4 Instruments and the data analysis method

The mixed-method design employed in this study integrates both quantitative (questionnaires) and qualitative (semi-structured interviews) data collection techniques. Initially, the questionnaire was disseminated among the undergraduate participants. Subsequently, based on the responses gathered from the questionnaire, four students were purposively selected (based on their answers for the Q13 – Q16 of the questionnaire) for semi-structured interviews to gain in-depth insights

into the needs, wants, and deficiencies perceived by first-year undergraduates regarding the Academic Literacy (ACLT) course. The interviews with the undergraduates were carried out in Sinhala language.

In accordance with Alfehaid (2011), Long (2005) underscores the importance of "triangulation of sources" in validating findings (p. 94). Hence, all these data collection tools were integrated into the study to enhance the robustness of the research. Thematic coding was employed for the analysis of semi-structured interview data. Regarding the quantitative data, a descriptive analysis was conducted, utilizing the quantitative data primarily for triangulation purposes in conjunction with the qualitative findings.

3.5 Need analysis

The NA model introduced by Brown (2009) was used in the current study due to its step by step guidance and feasibility. The NA used for the current study consists of three systematic steps: making basic decisions about the Needs Analysis, gathering information, and using the information. All of these main steps together comprise 10 sub-steps as illustrated by Figure 1 and 2 below.

Figure 1

A Framework for Doing Need Analysis, Source: Adopted and adapted from Brown, 2009

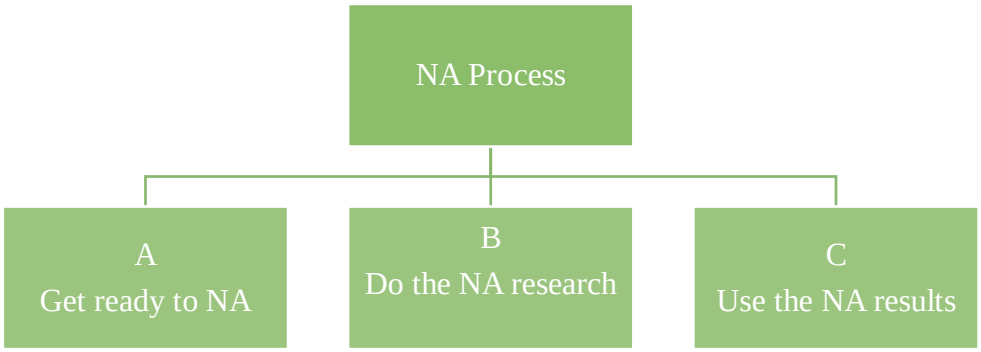
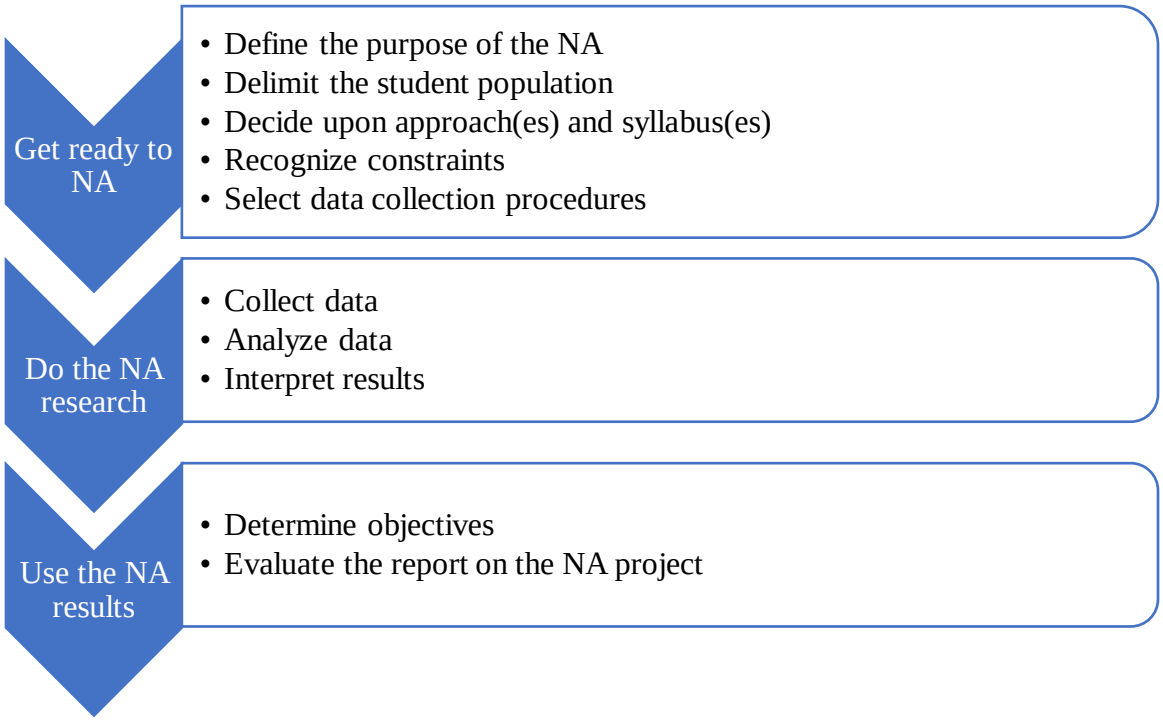


Figure 2

Ten Sub-steps of the Need Analysis, Source: Rathnasiri and Herath (2020)



The chart below shows the ten steps carried out to conduct the need analysis.

Table 2

Detailed Steps of the Need Analysis: Source: Author's Construct

A - Get ready to do NA	
The purpose	Exploring the needs, wants and lacks of the ACLT course provided for the first-year undergraduates at the university of Kelaniya
Delimit the student population	Focus only on the first-year undergraduates who followed the ACLT course in the first semester of the of the 2021/2022 academic year
Decided approach	Incorporate Brown's (2009) NA model to carry out the NA of the current study

Recognized constraints	Approaching the undergraduate in the second semester who completed ACLT course in the first-semester due to their less interest in participation as they are engaged with their academics
Selected data collection procedure	Design questionnaire to generate the relevant details and interview protocols
B - Do the NA research	
Collect Data	Administer the questionnaire and the interviews Even though the present practitioner was also assigned as a lecturer in ACLT programme, self-reflection was not used to avoid biasedness.
Analyze Data	Key focus is on qualitative data. Quantitative data is primarily utilized for triangulation purposes in conjunction with the qualitative findings. Thematic coding was used to analyze the qualitative data.
Interpret Data	Data was interpreted in order to draw conclusions with regard to the data that was obtained.
C-Use the NA results	
Determine Objectives	The objective of carrying out the current NA is in order to find the needs and lacks of the students who followed ACLT course and suggest recommendations for future improvement of the course.

Evaluate the report on the NA project	The results obtained from the recommendation will provide valuable insights to redesign the curriculum according to required enhancements.

3.5 Summary

In this mixed-method study, the research delves into the needs, lacks, wants, and perceptions of both undergraduates and lecturers regarding the Academic Literacy (ACLT) course at the University of Kelaniya. Utilizing a diverse sample from the Faculty of Science, the study integrates quantitative data through questionnaires and qualitative insights from semi-structured interviews. The research employs Brown's (2009) Needs Analysis model, comprising ten systematic steps, to comprehensively explore and understand the dynamics of the ACLT course. The findings aim to inform future enhancements, offering a valuable foundation for refining the curriculum and addressing the identified needs and deficiencies.

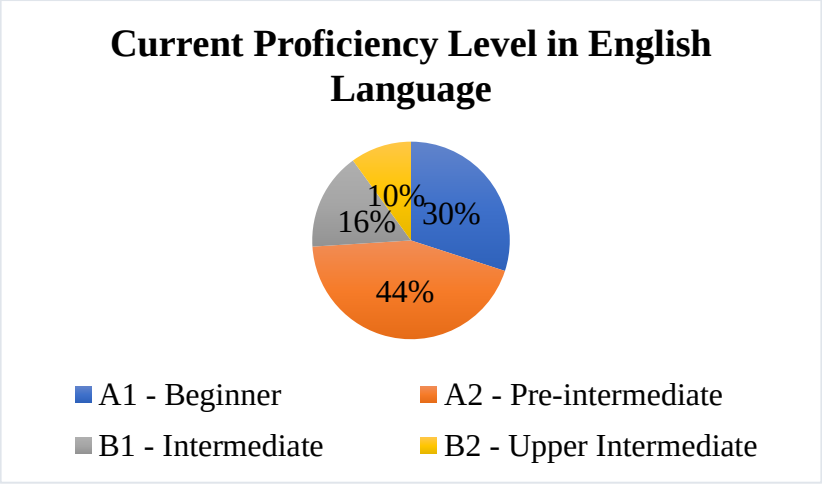
Results and discussion

4.1 The Current Proficiency Level in English

As demonstrated in figure 3, the majority of the undergraduates (44%) who are following ACLT course indicate their current proficiency in English language as the Common European Framework of References (CEFR) A2 Pre-intermediate level.

Figure 3

Frequency of Q5, Source: Data from questionnaire



4.2 The Current Proficiency Level in English Language Skills

Table 3

Frequency of Q7, Source: Data from questionnaire

English language skill	1 – Very good	2 – Good	3 – Moderate	4 – Weak	5 – Very Weak
Speaking	0	6	38	6	0
Listening	0	12	31	7	0
Reading	0	5	40	5	0
Writing	0	7	37	6	0

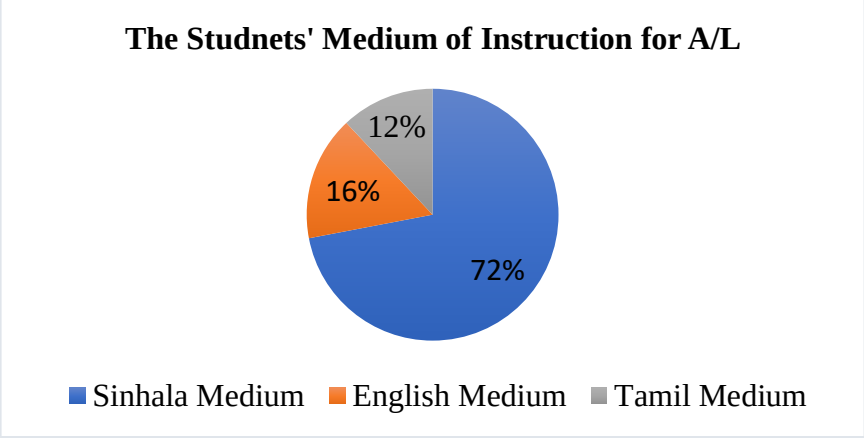
The table 3 indicates that the majority of participants assess their English language skills at a moderate level across all domains: Speaking, Listening, Reading, and Writing. Few participants reported higher or lower proficiency levels. Notably, no participants rated their skills as "Very Good" or "Very Weak" in any category.

4.3 The Medium of Instruction for A/L

The figure 4 shows the percentages of the students who has learned in English medium for their Advanced level. As shown in the figure the majority of students (84%) has done their Advanced Level examination in their mother tongue: either in Sinhala or Tamil medium.

Figure 4

Frequency of Q4, Source: Data from questionnaire



4.4 Discussion of the Data from the Undergraduates' Questionnaire and Semi-structured Interviews

4.4.1 Undergraduates' satisfaction in taking the ACLT course (Q10 on questionnaire and semi-structured interviews)

As mentioned by the students, the motivation for participating ACLT lectures was to enhance their English language skills within the context of science. The students further stated that as this is their initial exposure to English as the medium of instruction (this was also evident in the data from questionnaire), their expectations revolved around receiving support in comprehending lectures, effective note-taking, and proficiently tackling assignments and exams in the English language. The students' contentment with their decision to enroll in the ACLT course is clearly reflected in the following excerpts.

> "Developed my academic English skills most in writing. We learnt about the process of writing such as thesis statement, topic sentence, concluding sentence and referring to literature." (S1)
>
> "It gave me an understanding as to how to understand the action verbs in an assignment such as critique, evaluate, discuss and how to organize our assignment based on that." (S2)
>
> "This course helped me to understand how to spot ideas quickly in an academic paper on a journal." (Q16, Questionnaire)
>
> "We learned more about critical analysis, importance of referencing and avoiding plagiarism" (S4)
>
> "We learnt about building advanced sentences and using connectors" (Q16, Questionnaire)

As shown in the above excerpts, the students show satisfaction with their participation in the ACLT course, particularly in enhancing their academic writing and reading skills. This aligns with the findings of studies conducted by Dyk et al. (2011) and Jacoby et al. (1995), emphasizing the significance of incorporating elements such as process writing, discourse structure, and assessment writing in an Academic Literacy course tailored for the natural sciences.

4.4.2 The common reading, writing, speaking and listening tasks in the undergraduates' degree programs and the lacks in the ACLT course (Q7, Q8 & Q9 on questionnaire)

The questionnaire reveals that students frequently encounter the following writing tasks in their degree program, including lab reports, short answer writing, essay-type assignments, paragraph writing, literature reviews, citation and referencing, and presenting scientific data graphically. Additionally, it was found that 10 students engage in summarizing and critiquing articles and books. Furthermore, the data indicates that a significant portion of students (38 undergraduates) expressed that the ACLT course positively impacted their writing tasks, particularly in critiquing, essay writing, abstract writing, and avoiding plagiarism. Conversely, a majority of undergraduates (42 students) reported that the ACLT course did not contribute significantly to improve their report writing skills which was also evident through semi-structured interviews with undergraduates.

The undergraduates additionally expressed that the course did not comprehensively address certain types of writing essential for their degree program. The findings indicate that the emphasis was predominantly placed on cultivating critical thinking and writing skills, organizing ideas in a logical manner, and mastering the nuances of academic essays and reflective writing. However, there was a noticeable gap in addressing discipline-specific writing requirements germane to their field of study, particularly the omission of instruction on lab report writing. This genre of writing stands as one of the most recurrent and indispensable forms of written communication within the domain of natural sciences. The students' feedback highlights a discernible incongruity between the course content and the specific writing demands intrinsic to their academic discipline.

> "We leant more about critical writing, but not how to write a lab report which is very much important to us." (S3)

The questionnaire findings underscored the perceived benefits of the ACLT course in enhancing students' reading and listening skills, particularly in critical reading, interpreting data, and taking effective lecture notes. However, a significant majority of students expressed that the course did not adequately address the development of speaking skills and skills related to delivering academic presentations. This observation resonates with the perspective put forth by As et al. (2016), who assert that an academic literacy course should encompass a focus on delivering oral presentations. The apparent misalignment between the course content and the identified need for speaking and oral presentation skills highlights an area for potential enhancement in the ACLT curriculum to better align with the comprehensive development of academic literacy skills.

> "We learnt how to write an abstract, but we did not learn how to conduct an academic presentation." (S1)

Moreover, insights gleaned from the semi-structured interviews conducted with undergraduates underscored the importance of allocating more time specifically for interpreting graphically presented data and synthesizing information from diverse sources.

> "As science undergraduates, we need to interpret and comment on graphically presented data. The time allocated for that lesson was not enough to improve our skills. And it would be great, if we could do individual activities on that." (S3)

The undergraduates emphasized that dedicating time to these activities would be beneficial for their academic literacy development, aligning with their aspirations for enhanced skills in navigating academic challenges.

4.4.3 The need for lesson materials related to their respective fields of study (Undergraduates' semi-structured interviews)

As explained by the students, there is a need for instructional materials that directly align with their respective fields of study. Despite being a course intended for all students within the science faculty, the ACLT classes are conducted separately, with students segregated into distinct classrooms according to their respective degree programs. Despite encompassing students from nine diverse disciplines, the ACLT course predominantly emphasizes materials pertinent to the field of bioscience. Furthermore, as the present practitioner is also a lecturer of ACLT, the lesson materials occasionally incorporates examples from the domain of Teaching English as a Second Language (TESL), particularly in lessons addressing abstract writing. This inclusion of examples from a field markedly distinct from the students' primary areas of study underscores a notable deficiency in the ACLT course's material development. The observed discrepancy highlights the imperative for an immediate revision and adaptation of lesson materials to better cater to the varied academic backgrounds of the participating students.

> "It is good, if we could learn how to interpret and present scientific data practically as I am a physical science student. If the lecturer showed us it through authentic materials, we could understand a lot, because most of the materials were focused on bio science." (L4)

The aforementioned excerpt further underscores the undergraduates' expressed desire for more practical activities within the classroom setting. Notably, the students pointed out that a substantial portion of the materials, particularly in the context of teaching the description of graphically presented data, predominantly comprised fill-in-the-gaps activities. In this instance, the undergraduate specifically highlighted that the lesson materials primarily featured gap-filling exercises requiring the utilization of suitable verbs and adjectives to describe graphs and pie charts within the bioscience domain. However, the student articulated a perceived inadequacy in the applicability and practicality of these activities to their respective fields of study. The student's feedback emphasizes a preference for activities that afford them the opportunity to independently generate content related to their field of study, fostering a more interactive and constructive learning experience that includes personalized feedback from the lecturer.

4.4.4 The need for interesting lecture materials

The data derived from both questionnaires and semi-structured interviews with undergraduates provides additional insight into their expressed need for engaging course materials. As mentioned in semi-structured interviews, a predominant portion of the materials currently employed consists of extensive PDF documents containing numerous activities. Findings from the questionnaires and interviews indicate a clear preference among undergraduates for lecture materials to be presented in the form of PowerPoints. They specifically advocate for the integration of videos and visuals within these presentations. This inclination aligns with the observations made by Yadev and Jabeen (2013), who asserted that the incorporation of visual communication and the use of PowerPoint presentations can have a positive impact on long-term memory retention and foster increased interest in the learning process.

> “These topics were all new to us. So, it’s good the lecturers can use interesting materials rather than pdfs with lot of activities.” (S1)

The data gathered through questionnaires and semi-structured interviews with undergraduates provides additional insights into their perspective on the duration of the lectures. As mentioned by the students in the questionnaire, a notable aspect contributing to their dissatisfaction is the extended duration of lectures, which lasts for a continuous three-hour block each week. In the semi-structured interviews, the undergraduates expressed that this prolonged lecture format contributes to a perceived lack of engagement and interest during the sessions. The findings

suggest that there is a need for a more varied and dynamic instructional approach to enhance student engagement and maintain sustained interest throughout the duration of the lectures.

> "We would like if we were taught 2 hours rather than 3 hours at a stretch. Because we felt the lectures boring when we learn something difficult to us for 3 hours."

4.4.5 A need for different teaching methods

The data collected from both questionnaires and semi-structured interviews with undergraduates consistently indicated the students' desire for group and pair activities to facilitate a more interactive learning experience, as highlighted in the questionnaire responses (Q12).

> "I suggest interactive activities such as group activities, team speaking activities rather than a lot of handwritten tasks which make the course too much of work." (S1)

According to the students, the primary motivation for this request is the need for more engaging and interactive activities to sustain their attention during the extended three-hour lectures. They specifically mentioned that a substantial portion of the activities currently employed is handwritten, and they express a preference for more diverse and interactive approaches to enhance their overall learning experience. The call for group and pair activities reflects a shared sentiment among students for a more dynamic and participatory instructional environment.

> "I understand English. But I know lot of friends who couldn't understand a single lecture in ACLT. It would help us if Sinhala would also use time to time". (S2)

Additionally, the students further communicated that the incorporation of both Sinhala and English in the instructional delivery would enhance their comprehension of course content. They emphasized that this bilingual approach would contribute to a more nuanced and specific understanding of the materials, accommodating varying language proficiencies and facilitating a more inclusive learning environment.

4.5 Data from lecturers' questionnaire and semi-structured interviews

4.5.1 The need to revise the assessments in the ACLT course

The interviews conducted with ACLT course lecturers uncovered significant insights regarding the anticipated challenges faced by students and proposed solutions to enhance their overall lecture

experience. The majority of lecturers expressed concern about the relatively low levels of active student participation in ACLT lectures.

> "The main reason is most of the activities need them to read and write individually. And this is a three hours lecture. We can understand that the students cannot do a lot of written tasks for 3 hours. We would like if we have the chance to adopt the materials. But one of their assessments is to write reflective writing for activities they do for each day. To make a consistency, all of us give the same activities for students without adapting." (L1)

The students' challenges in completing ACLT assignments were highlighted during the interviews with lecturers. According to the lecturers, the primary reason for the difficulties faced by students in writing ACLT assignments is their lack of interest in the required task of producing a reflective summary each day. Lecturers expressed the belief that alternative assignments, such as composing academic essays, would not only be more beneficial for the students as a successful completion of writing tasks demands precise application of words in suitable contexts, a comprehensive grasp of vocabulary, a lucid understanding of the relevant subject matter, and a skillful amalgamation and organization of these elements within the paper (Rusinovci, 2015), but also potentially reduce their overall workload.

Summary

In summary, the assessment of the ACLT course highlights the majority of students perceiving their English proficiency at the Common European Framework of References A2 Pre-intermediate level. Despite students expressing satisfaction with enhanced academic literacy skills, challenges exist in aligning course materials with diverse disciplines and addressing specific writing demands. The need for more practical activities, engaging lecture materials, and dynamic teaching methods is emphasized. Lecturers acknowledge students' challenges in assignments, proposing alternative tasks to enhance interest and reduce workload. Overall, these insights call for a comprehensive review and adaptation of the ACLT course to better meet the varied needs and expectations of the students across different disciplines within the science faculty.

5. Conclusion and Recommendations

The comprehensive analysis of the Academic Literacy (ACLT) course at the University of Kelaniya reveals key areas that require attention and improvement. Drawing from the findings, several evidence-based recommendations are proposed to enhance the effectiveness and relevance of the ACLT curriculum.

One of the key recommendations arising from the needs analysis is the need to tailor course materials to disciplinary diversity. The ACLT curriculum should be revised and adapted to be more inclusive of disciplines beyond bioscience, considering the varied academic backgrounds of students. Developing materials that resonate with the needs of students from Computer Science, Applied Science, Applied Chemistry, and other disciplines is crucial for ensuring the relevance and effectiveness of the course. Another critical recommendation is the introduction of discipline-specific writing instruction. Recognizing and addressing the specific writing demands of different disciplines within the science faculty, including lab report writing, is essential. Students should receive explicit instruction on writing genres relevant to their field of study, ensuring they acquire skills essential for their academic and professional success. This recommendation aligns with the identified lack of coverage in report writing skills within the ACLT course.

The study underscores the importance of introducing more practical activities aligned with students' degree programs. The use of authentic materials and avoiding more gap filling activities to give students the opportunity to create their own piece of writing related to specific science fields can enhance the practicality and applicability of the ACLT course. This recommendation aligns with the principles of experiential learning, emphasizing the value of practical engagement to reinforce theoretical concepts (Kolb, 1984). Also, addressing students' preferences for engaging content requires the diversification and enhancement of lecture materials. Incorporating multimedia elements such as PowerPoint presentations, videos, and visuals is recommended to foster sustained interest and facilitate long-term memory retention (Yadev & Jabeen, 2013). These enhancements will contribute to a more dynamic and effective learning experience.

Responding to student feedback regarding the extended duration of ACLT lectures, a recommendation is made to break down the three-hour sessions into more manageable time frames. This adjustment aims to enhance the overall learning experience by reducing perceived boredom during challenging segments as optimal course duration is crucial for maintaining student

engagement and attentiveness (Bligh, 2000). Moreover, to accommodate students with varying language proficiencies, bilingual instruction is recommended. Adopting a bilingual approach, when necessary, can facilitate better understanding and foster a more inclusive learning environment. This aligns with the principles of differentiated instruction, recognizing and accommodating diverse learner needs (Tomlinson, 1999).

A critical recommendation involves the revision of assessments to increase student engagement. Reassessing the current assignment structure and exploring alternatives to reflective summaries can enhance student interest and participation. Introducing diverse assessment methods, such as academic essays aligned with course objectives, can reduce the workload on students while fostering active engagement (Biggs, 2003). This change in assessment structure will also grant lecturers the autonomy to tailor activities according to their preferences and teaching styles, fostering a more dynamic and participatory learning environment.

It is recommended to incorporation of group and pair activities to address students' desire for a more dynamic classroom experience as these collaborative tasks can promote engagement and knowledge sharing. Also, the incorporation of activities that improve students speaking and presentation skills is crucial to further addressed the required needs of the undergraduates. Furthermore, it is advised to allocate dedicated time for interpreting graphically presented data. This inclusion ensures that students develop proficiency in comprehending and analyzing visual information, a skill relevant to various academic disciplines. Overall, diversifying the instructional strategies through collaborative tasks, speaking activities, presentations, and graphical data interpretation can significantly enhance the overall learning experience and address the diverse needs of students in the ACLT course.

In conclusion, the recommendations derived from the analysis of the ACLT course at the University of Kelaniya focus on key areas for improvement. By revising course materials, incorporating discipline-specific writing instruction, enhancing practical activities, diversifying lecture materials, optimizing course duration, promoting bilingual instruction, revising assessments, and facilitating interactive learning, the ACLT course can better cater to the diverse needs and expectations of students within the science faculty. These evidence-based recommendations provide a roadmap for continuous improvement, ensuring the ACLT course remains relevant and effective in preparing students for academic success and future professional

endeavors. Regular evaluations and adaptations based on emerging academic requirements will further contribute to a supportive and dynamic learning environment.

References

Al-Hamlan, S. A. (2015). A Needs Analysis Approach to EFL Syllabus Development for Second Grade Students in Secondary Education in Saudi Arabia: A Descriptive Analytical Approach to Students' Needs. *American International Journal of Contemporary Research*, 5*(1)*, 118-145.

Alfehaid, A. F. (2011). *Developing an ESP curriculum for students of Health Sciences through Needs Analysis and Course Evaluation in Saudi Arabia*. Ph. D. thesis, School of Education, University of Leicester.

As, J. V., Fouche, I., & Immelman, S. (2016). Academic Literacy for Science: A Starting Point for Recurriculation. *Journal for Language Teaching*, 50*(2)*, 11-35. DOI: 10.4314/jlt.v50i2.1

Bachman, L.F. & Palmer, A.S. (1996). *Language testing in practice: Designing and developing useful language tests*. Oxford University Press.

Belcher, D. (2009). What ESP is and can be? An introduction. In D. Belcher (Ed.), *English for specific purposes in theory and practice* (pp. 1-20). University of Michigan Press. https://doi.org/10.3998/mpub.770237.

Berwick, R. (1989) Needs Assessment in Language Programming: From Theory to Practice, In R. K. Johnson (Ed.) *The Second Language Curriculum*, Cambridge: Cambridge University Press, pp: 48-62. DOI: http://dx.doi.org/10.1017/CBO9781139524520.006

Biggs, J. (2003). *Teaching for quality learning at university*. SRHE and Open University Press.

Bligh, D. A. (2000). *What's the Use of Lectures?* Jossey-Bass.

Boughey, C. (2000). *Contrasting constructions of students' literacy-related experiences at a historically black South African university*. University of the Western Cape.

Brindley, C. (1989). The Role of Needs Analysis in Adult ESL Programme Design, In: R. Johnson (ed.) *The Second Language Curriculum*, New York: Cambridge University Press, pp: 63-78. DOI: https://doi.org/10.1017/CBO9781139524520.007

Brown, J. D. (2009). Foreign and second language needs analysis, In M. H. Long & C. J. Doughty (Eds) *The Handbook of Language Teaching*, Blackwell Publishing Ltd. DOI: https://doi.org/10.1002/9781444315783.ch16

Brown, J. D. (2016). *Introducing Needs Analysis and English for Specific Purposes*. Routledge.

Brown, J. D. (1995). *The elements of language curriculum: A systematic approach to program development*. Heinle & Heinle.

Burns, N., & Grove, S. K. (1997). *The practice of nursing research: Conduct, critique and utilization* (3rd ed.). W.B, Saunders.

Byun, K., Chu, H., Kim, M., Park, I., Kim, S., & Jung, J. (2011). English-medium teaching in Korean higher education: policy debates and reality. *Higher Education*, 62*(4)*, 431–449. doi: 10.1007/s10734- 010-9397-4

Coleman, J. A. (2006). English medium teaching in European higher education. *Language Teaching*, 39*(1)*, 1 – 14. Retrieved from http://oro.open.ac.uk/5189/1/download .pdf

Costa, F. & Coleman, J.A. (2013). A survey of English medium instruction in Italian higher education. *International Journal of Bilingual Education and Bilingualism*, 16*(1)*, 3–19. Retrieved from https://www.tandfonline.com/doi/abs/1 0.1080/13670050.2012.676621

De Silva, R. & Devendra, D. (2014) Responding to English language needs of undergraduates: Challenges and constraints: a study of the needs and expectations of students in the English for General Academic Purposes (EGAP) programme at the OUSL, *OUSL Journal*, 7, pp: 1-24. DOI: https://doi.org/10.4038/ouslj.v7i0.7305

Dudley-Evans, T., & St. John, M. J. (1998). *Developments in English for Specific Purposes*. Cambridge University Press.

Galloway, N. (2020). English in Higher Education-English Medium Part 1: Literature Review. Retrieved from https://www.teachingenglish.org.uk/site

Gee, J. (2008). *Social linguistics and literacies*. Routledge.

Graves, C. (1999). *Designing language courses: A guide for teachers*. Heinle & Heinle

Hutchinson, T. &. Waters, A. (1987). *English for Specific Purposes: a learning centered approach*. Cambridge University Press.

Jacoby, S., Leech, D. & Holten, C. (1995). A genre-based developmental writing course for undergraduate ESL science majors. In: Belcher, D. & Braine, G. (eds). *Academic writing in a second language: Essays on research and pedagogy*. Ablex Publishing Coorperation.

Kaburise, P. (2012). Foundation English at the University of Venda: How responsive is it?. *South African Journal of Higher Education*, 26*(1)*, 77-90.

Kao, S. M., & Liao, H. T. (2017). Developing Glocalized Materials for EMI Courses in the Humanities. English as a Medium of Instruction in Higher Education: Implementations and Classroom Practices in Taiwan, 147-162.

Kern, R. (2000). *Literacy and language teaching*. Oxford University Press.

Kolb, D. A. (1984). *Experiential learning: Experience as the source of learning and development*. Prentice-Hall.

Lea, M.R. & Street, B.V. (1998). Student writing in higher education: An academic literacies approach. *Studies in Higher Education*, 23*(2)*, 157-172.

Leibowitz, B. (2001). *Students' prior learning and their acquisition of academic literacy at a multilingual South African university*. University of Sheffield.

Lillis, T., & Turner, J. (2001). Student writing in higher education: Contemporary confusion, traditional concerns. *Teaching in Higher Education*, 6*(1)*, 57-68. https://doi.org/10.1080/13562510020029608

Mahawattha, N., & Rassool, R. (2021). Investigating understanding of academic literacy in English medium degree programmes among stakeholders in Sri Lankan higher education. Proceedings of the 7th International Conference on Humanities and Social Sciences (IRCHSS - 2021) : https://ssrn.com/abstract=3809868 or http://dx.doi.org/10.2139/ssrn.3809868

Munby, J. (1978). *Communicative Syllabus Design*. Cambridge University Press.

Nunan, D. (1988). *The learner-centered curriculum*. Cambridge University Press.

Ranasuriya, D., Herath, S. (2020). A Needs Analysis on the language skills required by the industry from vocational graduates. *Sri Lanka Journal of Social Sciences*, 43*(2)*, 85-98.

Richards, J. C. & Rodgers, T. S. (2001). *Approaches and Methods in Language Teaching: Content-Based Instruction*, p. 204. DOI: https://doi.org/10.1017/CBO9780511667305.021

Rusinovci, X. (2015). Teaching Writing Through Process-Genre Based Approach. *Education and Linguistic*s. DOI:10.17265/2161-623X/2015.10A.006

Tomlinson, C. A. (1999). *The differentiated classroom: Responding to the needs of all learners*. ASCD.

Van Dyk, T., Cillié, K., Coetzee, M., Ross, S. & Zybrands, H. (2011). Investigation into the impact of an academic literacy intervention on first-year students' academic language proficiency. *LitNet Academics*, 8(3), 487-506.

Van Dyk, T. & Van de Poel, K. (2013). Towards a responsible agenda for academic literacy development: considerations that will benefit students and society. *Journal for Language Teaching*, 47*(2)*, 43-69.

West, R. (1994) Needs analysis in language teaching. *Language Teaching*, 27*(1)*, pp: 1-19. DOI: https://doi.org/10.1017/S0261444800007527

Yadav, K. T. P., & Jabeen, S. S. (2013). Role and Impact of Visual Communication in Microsoft PowerPoint Presentations. *2nd Annual International Conference on Language, Literature and Linguistics*, 208-212. DOI:10.5176/2251-3566_L313.122

APPENDIX A: NEED ANALYSIS FOR UNDERGRADUATES

Need Analysis

The information that you provide in this questionnaire will be confidential and solely used for the purpose of collecting data for the research study titled "A Needs Analysis: An Upgrade to the First Year Undergraduates' Academic Literacy Course in the Faculty of Science, University of Kelaniya". Therefore, please be kind enough to answer all the questions.

Part A - General information

Instructions: Please tick (✔) the most appropriate box or fill in the blanks.

1. Gender:

   Male ☐ Female ☐

2. Age:

   20-25 years ☐
   26-30 years ☐
   31-35 years ☐

3. First Language/ Mother Tongue:

   Sinhala ☐
   Tamil ☐
   English ☐
   Other (Please mention): …….

4. What highest qualification did you have before you become an undergraduate?

   O/L
   A/L ☐
   Higher Diploma ☐
   IELTS (Please mention the overall band) - …….

5. What was the medium of instruction you selected when you were doing your Advanced Level studies?

   Sinhala ☐

   Tamil ☐

   English ☐

   Other - ……

Part B – Self-Evaluation

Instruction: For Question Number 5, 6, 7 and 8, please tick (✔) in the box most appropriate to your answer and write short answers in the given space.

6. Please put a tick (✔) in the box that shows your current level of English proficiency.

A1	• Can understand and use familiar everyday expressions. • Knows and can understand very basic phrases. Can introduce him/herself and others. • Can ask and answer questions about personal details such as where he/she lives, people he/she knows and things he/she has. • Can write a short and simple writings.	☐
A2	• Can understand sentences and frequently used expressions related to areas of most immediate relevance (e.g. very basic personal and family information, shopping, local geography, employment). • Can communicate in simple and routine tasks requiring a simple and direct exchange of information on familiar and routine matters. • Can describe/ write in simple terms aspects of his/her background, immediate environment and matters in areas of immediate need.	☐

B1	• Can understand familiar matters regularly encountered in work, school, leisure, etc. • Can deal with unprepared conversations on the familiar topics such as travel, work, current events, etc. • Can write simple connected text on topics which are familiar or of personal interest. • Can describe experiences and events, dreams, hopes & ambitions and briefly give reasons and explanations for opinions and plans.	☐
B2	• Can read and understand the main ideas of complex text on both concrete and abstract topics, including technical discussions in his/her field of specialization. • Can build a conversation with a degree of fluency and spontaneity with native speakers quite possible without strain for either party. • Can produce clear, detailed text on a wide range of subjects and explain a viewpoint on a topical issue giving the advantages and disadvantages of various options.	☐
C1	• Can understand a wide range of demanding, longer texts, and recognize implicit meaning. • Can express him/ herself fluently and spontaneously without much obvious searching for expressions. • Can use language flexibly and effectively for social, academic and professional purposes. • Can produce clear, well-structured, detailed text on complex subjects, showing controlled use of organizational, patterns, connectors and cohesive devices.	☐
C2	• Can understand with ease virtually everything heard or read.	☐

	• Can summarise information from different spoken and written sources, reconstructing arguments and accounts in a coherent presentation. • Can express him/herself spontaneously, very fluently and precisely, differentiating finer shades of meaning even in more complex situations.	

Adopted from CEFR rubric, University of Cambridge

7. Evaluate your current proficiency level in English language skills.

English language skill	1 – Very good	2 – Good	3 – Moderate	4 – Weak	5 – Very Weak
Speaking					
Listening					
Reading					
Writing					

Part C – Academic literary needs

8. Please indicate the frequency with which you engage in various types of tasks for your coursework. Use 'N' if a particular type of writing task is not applicable to your field of study.

Writing Task	Very Often	Often	Not Often	No such task
Short answer writing				
Essay type answer writing				
Academic papers				
Paraphrasing				
Summary writing				
Critiquing				
Lab reports				

Abstract writing				
Paragraph and essay writing				
Argumentative writing (Developing logical arguments)				
Conducting literature reviews				
Citation and referencing				
Presenting scientific data graphically				
Other (please mention) …….				

Reading Task	Very Often	Often	Not Often	No such task
Reading journals and research articles				
Understanding and interpreting research articles				
Critical reading				
Other (please mention) …….				

Listening Task	Very Often	Often	Not Often	No such task
Listening to recorded or live lectures on scientific topics				
Taking notes on key concepts and important details.				
Other (please mention) …….				

Speaking Task	Very Often	Often	Not Often	No such task

Academic Presentation				
Group discussions				
Other (please mention) …….				

9. Which tasks did the ACLT course address out of these tasks?

Writing Task	Adequately addressed	Not adequately addressed	Did not addressed
Short answer writing			
Essay type answer writing			
Academic papers			
Paraphrasing			
Summary writing			
Critiquing			
Lab reports			
Abstract writing			
Paragraph and essay writing			
Argumentative writing (Developing logical arguments)			
Conducting literature reviews			
Citation and referencing			
Presenting scientific data graphically			
Other (please mention) …….			

Reading Task	Adequately addressed	Not adequately addressed	Did not addressed

Reading journals and research articles			
Understanding and interpreting research articles			
Critical reading			
Other (please mention) …….			

Listening Task	Adequately addressed	Not adequately addressed	Did not addressed
Listening to recorded or live lectures on scientific topics			
Taking notes on key concepts and important details.			
Other (please mention) …….			

Speaking Task	Adequately addressed	Not adequately addressed	Did not addressed
Academic Presentation			
Group discussions			
Other (please mention) …….			

10. After taking ACLT course, how much have you improved? Put (✔) in the box most appropriate to your answer.

Writing Task	Improved a lot	Improved a little	No improvement
Short answer writing			
Essay type answer writing			

Academic papers			
Paraphrasing			
Summary writing			
Critiquing			
Lab reports			
Abstract writing			
Paragraph and essay writing			
Argumentative writing (Developing logical arguments)			
Conducting literature reviews			
Citation and referencing			
Presenting scientific data graphically			
Other (please mention) …….			

Reading Task	Improved a lot	Improved a little	No improvement
Reading journals and research articles			
Understanding and interpreting research articles			
Critical reading			
Other (please mention) …….			

Listening Task	Improved a lot	Improved a little	No improvement
Listening to recorded or live lectures on scientific topics			

Taking notes on key concepts and important details.			
Other (please mention) …….			

Speaking Task	Improved a lot	Improved a little	No improvement
Academic Presentation			
Group discussions			
Other (please mention) …….			

11. What materials do you prefer when learning?

PowerPoint Presentations ☐
PDF Documents ☐
Videos/ Pictures/ Visuals ☐
Other: ……..

12. What kind of classroom activities do you prefer the most?

Individual activities ☐
Pair activities ☐
Group activities ☐
Other: ……

13. How effective the assignments of the ACLT course for your academic work? Why?

……
……
……

14. How interesting were the in-class activities?

……

……

……

15. Are there any particular topics or skills within the Academic Literacy course that you find less relevant to your science studies?

……

……

……

16. Any suggestions for the improvement of the ACLT course in future?

……

……

……

Thank You!

APPENDIX B: INTERVIEW QUESTIONS FOR UNDERGRADUATES

1. Can you share your overall experience with the Academic Literacies (ACLT) course? What aspects did you find most beneficial, and were there any challenges?
2. How do you perceive the relevance of the ACLT course to your academic journey? In what ways has it contributed to your understanding of academic language and literacy?
3. Can you describe specific activities or assignments in the ACLT course that you found particularly helpful in developing your academic language skills?
4. How do you approach and manage the reflective writing assignments in the ACLT course? Do you find them effective in enhancing your written communication skills?
5. To what extent do you believe the ACLT course has impacted your ability to engage with academic texts and materials across different disciplines?
6. Have you observed any changes in your collaborative and communication skills as a result of group or pair activities in the ACLT course?
7. Reflecting on the course content, are there specific topics or areas you believe could be expanded or improved to better support students in their academic language development?
8. In terms of the overall structure and format of the ACLT course, do you have any suggestions or preferences for how it could be enhanced to better meet the needs of students?

APPENDIX C: INTERVIEW QUESTIONS FOR LECTURERS

1. Can you elaborate on the challenges you've observed regarding active student participation in ACLT lectures, especially considering the extended duration of three hours?
2. In your opinion, how do the current assessments, particularly the requirement for daily reflective writing, contribute to the low levels of engagement among students?
3. The need for consistency in adopting materials was highlighted. Could you share your thoughts on how adapting materials might positively impact student engagement and overall learning outcomes?
4. How do you perceive the effectiveness of the current reflective writing assessments in enhancing students' academic language skills? Are there specific challenges associated with this approach?
5. Students have identified a lack of interest in producing reflective summaries daily. What alternative assessment methods or tasks do you believe could better capture and stimulate student engagement in academic language development?