

The impact of language barriers on information search processes in Algerian universities: a field survey of first-year humanities students at the University of Ghardaïa

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Abstract ;

The study investigates the impact of language barriers on first-year humanities students at the University of Ghardaïa, focusing on their search for and retrieval of information for their academic studies. The research uses a two-year field experiment surveying 405 assignments and is backed by two focus groups. It reveals that whatever their level in foreign languages, students rely heavily on the language of instruction during information searches. They also rely on automatic translation when retrieving information sources in languages other than the language of instruction. The study concludes that language barriers negatively affect the information search process related to university study requirements; the study suggests solutions to enhance information retrieval in multilingual academic environments, highlighting the importance of university professors and tools such as automatic translation.

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1. Introduction

Searching for information has undergone a profound transformation in the internet era, granting access to vast amounts of diverse data with just a few clicks. We can now retrieve high-quality information on nearly any topic from numerous sources worldwide. Consequently, searching for and acquiring information online has become common among students, allowing them to retrieve, evaluate, and utilize information for assignments, research, and other academic activities. However, this abundance of information also presents significant challenges. Even in source-rich information environments, individuals often encounter obstacles during information searches. Some scholars attribute the underutilization of available information to material barriers, as online information is often disorganized, scattered, and interactive; this requires students to adapt their search habits and navigate flexible information environments, which is quite different from traditional methods of information searching.

On another level, with the dissemination of science and knowledge no longer confined to a single language, not all languages are equally represented. Dominant languages, such as English, Chinese, and Spanish, are significantly widespread in major online information sources like databases, digital repositories, and journals. This disparity introduces additional student barriers, potentially leading to neglecting valuable sources or noise in search results.

Research in multiple languages is fundamental to achieving a deeper and more comprehensive understanding of studied topics, enhancing scientific research's quality and diversity; this is evident in accessing diverse knowledge sources, increasing the inclusivity of research, and fostering a holistic understanding of the subject. Additionally, multilingual information searches can be a tool for evaluating information quality, mainly when conducted by untrained individuals. By exploring research from various linguistic and cultural backgrounds, new perspectives can promote innovation and creativity in the field of research. The problem of this study emerged through observations made while correcting assignments in the years preceding the field experiment. These observations revealed that students predominantly relied on information sources in the language of instruction (Arabic), with an absence of sources in other languages. From the above, we have posed the following primary research question: What is the impact of language barriers on the processes of searching and retrieving information required for university study among first-year humanities students at the University of Ghardaïa?

Sub-questions:

- Does the professor have a positive role in helping students overcome language barriers during information searches?
- Does a student's fluency in multiple languages positively affect the information search process?
- Does automatic translation help overcome language barriers during the search process?

2. Study Hypotheses

General Hypothesis:

Language barriers negatively affect the processes of searching for and retrieving information required for university studies among first-year Humanities students at the University of Ghardaïa.

Sub-Hypotheses:

- the professor has a positive role in helping students overcome language barriers during information searches.
- A student's proficiency in more than one language helps overcome language barriers that hinder searching for information in multiple languages.
- Automatic translation facilitates the removal of language barriers during the search process.

3. Study Significance

Information has become a strategic resource, as important as other resources, and searching for it has gained critical importance across various fields; this is especially true for information relevant to students' academic requirements at universities, as the effectiveness of this process depends on students' personal effort. With the diversity of information in both form and language, language can represent a barrier before, during, and after the search process. Without adopting appropriate techniques, and tools, language barriers may lead to neglecting important information sources and negatively affecting information retrieval. This study provides practical solutions for improving information searches in rich and multilingual online sources; it emphasizes the role of professors in facilitating the

process and includes integrating modern tools, such as automatic translation, to enhance information retrieval.

4. Key Concepts

4.1 Language Barriers

The term refers to all challenges resulting in communication gaps due to individuals not speaking the same language (Oxford A.L.D., 2010). This study treats language barriers as a lack of adequate linguistic skills to access to information (Choemprayong, 2010), written in an unfamiliar or incomprehensible language for the student.

4.2 Proficiency

It is a skill, mastery, and expertise in a particular field or task (Oxford A.L.D., 2010); it can be mastered through learned skills acquired via academic training or self-training.

4.3 Information Searching

This refers to the methods, tools, procedures, and techniques used to locate information based on user-defined criteria. Information searches typically involve three stages (A.P.I.D., 2018):

- Bibliographic searches for references and related documents;
- Documentation searches, including acquiring the actual documents;
- Identifying information within selected documents (information retrieval).

4.4 Information Search Process

Theorists define the information search process as a multi-stage procedure involving methods, techniques, tools, and strategies based on specific criteria set by the user to select information from an organized or unorganized collection of resources (Boubée, 2007), where the need for information is the actual driver of this

process. Any information search process typically consists of four fundamental activities: starting, chaining, collecting, and comparison; several factors influence these activities, and they are as follows (Ellis, 2006): content-related factors (e.g., access to an information source), cognitive factors (e.g., recognition of the problem) and emotional factors (e.g., trust in the information source). Information search is regarded as a cognitive process that begins with recognizing an information lack; it ends with resolving that gap or abandoning the process due to certain obstacles (Boubée, 2007). Because this process can be materially represented, researchers can observe, analyze, deconstruct, reconstruct, and measure it; this allows for studying this phenomenon from several aspects (Ihadjadene, 2009).

4.5 Information Retrieval

This encompasses browsing and searching for information to locate and utilize it effectively, employing integrated elements to achieve retrieval through traditional or automated methods (2014، حواطي).

4.6 The role of the professor in information searching

A professor has multiple responsibilities that extend beyond conducting research and transmitting knowledge. Their role also includes teaching students effective strategies and methods for scientific research. Students learn from professors how to access facts and acquire knowledge from primary sources through training in various modern techniques that assist them in completing their assignments and research, particularly those related to advanced documentation tools (Wan et al., 2024). Moreover, professors guide students in analyzing and evaluating information

from multiple sources, thereby transforming linguistic challenges and barriers encountered during the information search process within pedagogical activities into opportunities for learning and growth (Tacelosky, 2009).

4.7 Behaviorist Learning Theory

Behavioral theory is one of the most prominent theories in education and second language learning. Despite criticisms of its superficiality, its influence remains significant. The theory emphasizes observable and measurable behaviors, employing scientific methods to analyze and modify them to enhance performance and productivity across various domains; the teacher (or trainer) manipulates the environment to stir up a reaction, employing various methods through which educators can apply behavioral theory in the classroom to improve student's learning and behavior. Below are some examples of behavioral teaching strategies (Hafner & Miller, 2021):

4.7.1 Reinforcement

It has two types:

Positive reinforcement: Providing rewards or incentives is crucial for fostering desirable behaviors; it allows teachers to motivate students and increases the likelihood of these behaviors being repeated. Such rewards include verbal praise, stickers, bonus points, or other tangible incentives.

Negative reinforcement: It refers to removing an unpleasant stimulus following a behavior to increase the likelihood of its recurrence. For instance, a teacher might reduce the amount of homework assigned to a student who performs well on a test, allow the student to skip a test if they achieve a high score on a pretest, or exempt

them from a penalty if they rectify their mistake.

4.7.2 Punishment

It involves implementing consequences to prevent undesirable behaviors, and punishment takes two forms of behavior modification (Dad et al., 2010):

Positive punishment: Add something to the mix that will lead to an undesirable outcome, such as assigning the student additional work due to their lack of attention.

Negative punishment: Involves removing a stimulus to discourage undesirable behavior, such as deducting points from a grade or annulling privileges for violating a rule.

In the context of behavior modification through punishment, the terms "positive" and "negative" do not signify good or bad; instead, "positive" refers to the addition of a stimulus, while "negative" refers to its removal. Nonetheless, it is crucial to employ punishment judiciously and carefully consider its effects on the student's motivation.

4.7.3 Modeling

It involves demonstrating desirable behaviors for students to observe and imitate. Teachers can act as role models by displaying appropriate behavior and providing examples of how to perform certain tasks or handle specific situations. For example, they can show students how to write an essay or how to conduct in a group project.

4.7.4 Shaping

It involves gradually reinforcing successive approximations of a desired behavior until mastery. This technique breaks down complex behaviors into smaller, manageable steps, gradually

allowing students to develop the desired skills or behaviors. For example, a teacher can reward a student for writing one sentence, then two sentences, and then a paragraph until the student can write an entire essay.

4.7.8 Repeating

Skinner posited that all behaviors are shaped through the interaction between stimuli and responses, with repetition playing a pivotal role in this process. Effective learning occurs when responses are consistently repeated, requiring the learner to actively engage with stimuli that the teacher has anticipated in advance.

4.8 Translation

Translation involves converting written or spoken content into another language (Oxford A.L.D., 2010), preserving its meaning and structure while adapting it to the target language (1999, الديداوي).

4.9 Focus Group

It can be defined as a method for collecting data from a limited number of participants, typically ranging between six and twelve (6–12) individuals. This method involves conducting a discussion that a moderator guides. The moderator's role is to direct the conversation in a manner that aligns with the research objectives by answering specific questions formulated by a researcher (2023, حفيان).

5. Literature Review

5.1 Cultural and linguistic barriers to information retrieval and dissemination (Shoki, Oyelude, 2006)

The paper examines how culture and language act as barriers to both information retrieval by library users and information dissemination by providers. These factors introduce biases in the interpretation,

analysis, and organization of library materials, particularly in cataloging, classification, and indexing. Cultural and linguistic differences influence semantic derivations, complicating information retrieval and impacting research and education. Researchers conducted a study in 10 Nigerian libraries involving cataloguers, indexers, and users and found that both groups encounter cultural and language biases that influence their interactions with information. The paper recommends leveraging culture and language as enabling factors and emphasizes educational and research institutions need to address these challenges to improve knowledge organization and dissemination.

5.2 Information barriers and Māori secondary school students (Spencer, 2008)

An investigation was undertaken of the information barriers encountered by Māori secondary school students when seeking information in different cultural contexts. A mixed methods approach was undertaken through a questionnaire and focus group interviews with Māori students aged 16 and over in years 11-13 at four different secondary schools. Quantitative analysis was carried out on the questionnaire data from 139 respondents using SPSS software. Qualitative analysis on the transcripts from the forty-five participants in the focus group interviews was carried out using HyperResearch software. Research results reveal that the students are not always able to access the information they want due to its 'unavailability', or they perceive the information as being incorrect. Access to information technology and the Internet

remain significant barriers to overcome. The study revealed that the types of barriers encountered by students varied according to the cultural context they were seeking the information in. Individuals who have strong Māori cultural identity indicators experience fewer information barriers in the two cultural worlds of which they are part.

5.3 Barriers to information seeking in school libraries: conflicts in perceptions and practice (Meyers, Nathan, & Saxton, 2007)

This paper investigates barriers to adolescent information seeking in high school libraries within the framework of Kuhlthau's model of intermediation. In-depth interviews and corroborating observations were conducted at six high schools in the Pacific Northwest over a sixteen-month period. The data suggest inconsistencies between teacher-librarians' self-perceptions of their role and their daily interactions with students. Harris and Dewdney's principles of information seeking are employed as an analytic framework to provide a structure for categorizing and examining these inconsistencies. The identified barriers to student information seeking include a lack of collaboration, students' lack of autonomy, limited access to resources, devaluation of interpersonal sharing for academic purposes, lack of affective support, and failure to validate students' previous experience in seeking information. These findings suggest future direction for pre- and in-service education of teacher-librarians to prepare them to recognize how the unique barriers within school contexts can constrain both their

mediational behaviour and students' information seeking opportunities.

5.4 Critical review

As mentioned earlier, the studies investigated the execution of information search processes and the barriers hindering their success, emphasizing cultural and linguistic challenges. These studies employed a system paradigm focused on information institutions. However, the present study introduces a user paradigm that prioritizes students' search behaviors. This model aims to overcome challenges and meet the informational needs of first-year Humanities students at the University of Ghardaïa through personal effort and activity.

6. Fieldwork Methodology

6.1 Methodology

The field research methodology will be utilized to conduct this study. According to Maurice Angers, this method involves systematically observing and monitoring a specific phenomenon or event by adhering to investigative procedures over a defined period within a study population. The objective is to understand the phenomenon, derive findings, and formulate generalizations that contribute to a deeper understanding of and improvements to reality (2006، أنجرس). This methodology is deemed suitable for the present study, which seeks to examine the impact of language barriers on information search processes and to analyze and interpret the resulting data.

6.2 Research Tools

6.2.1 Field experiment

A two-year field experiment was conducted during the academic years 2022-2023 and 2023-2024. The researcher taught a subject common to all class groups,

which facilitated data collection and led to a comprehensive survey of tasks assigned to first-year humanities students. In the second year, the experiment included only two groups due to reduced teaching hours. The researcher used a crossover group combining the control group and the experimental group in the same group, with the time difference in the inclusion of the independent variable (professor's role).

6.2.2 Focus Groups

The study also employs the focus group method (homogeneous), establishing two groups in the first season (2022-2023) at the beginning of the second semester, each with eleven students. The first group comprised students who obtained a baccalaureate in Foreign Languages branch, while the second group included students with a baccalaureate in Philosophy branch. The reason for using this tool, which is popular among many academic researchers, is to delve deeper into the field experiment results, as it is more effective for an in-depth exploration of the study topic. Through interactive group discussions, which allow participants to talk about each other's ideas and provide important opinions to this study, qualitative data of significant value regarding the phenomenon under study were generated. The discussion was divided into three main topics as follows:

Table 1. Topics of discussion for the two focus groups

Topics	Students background Foreign Languages branch (Group 01)	Students background Philosophy branch (Group 02)
First Topic	- Proficiency level in foreign languages (English & French). - Proficiency level in the language of specialization.	- Proficiency level in foreign languages (English & French).
Second Topic	- Providing terminology in foreign languages by professors. - Researching information in multiple languages.	- Providing terminology in foreign languages by professors. - Researching information in multiple languages.
Third Topic	- Tools used in translation.	- Steps for searching in foreign language; - Tools used in translation.

6.3 Study Scope

Geographical Scope: The fieldwork was conducted in the department of history, faculty of social and humanities sciences, at the University of Ghardaïa.

Target Population: The study focused on first-year humanities students enrolled in the Department of History.

6.4 Study Sample

The sample consisted of assignments submitted by first-year humanities students during the academic years 2022-2023 and 2023-2024. In the first year, the researcher conducted a comprehensive survey of all class

groups (345 assignments). Due to a reduction in teaching hours, as the allocation of courses and groups is under the purview of the Department of History's administration, the second year is limited to only two groups (60 assignments). This accidental sampling is one of the simplest techniques for sample selection, used by the researcher when other sampling methods cannot be applied (Depelteau, 2010).

7. Study findings

7.1 Field experiment results

Table 2. Field experiment results for the two academic years (Season1 + Season2)

Academic year 2022-2023 (Season 1)				
Semester	First semester		Second semester	
Professor's role	Without professor's intervention (pre-measurement)		With professor's intervention	
Subjects Taught	Introduction to Bibliography (Tutorial)		Organizing and managing information systems (Tutorial)	
Students' groups (No .of students)	01, 02, 03, 04 & 05 (128 students)		01, 02, 03 & 04 (109 students)	
Information sources by language	Language of instruction	Foreign language	Language of instruction	Foreign language
Subtotal Season 1	189	0	156	156
Academic year 2023-2024 (Season 2)				
Semester	First semester		Second semester	
Professor's role	Without professor's intervention (pre-measurement)		With professor's intervention	
Subjects Taught	Introduction to Bibliography (Tutorial)		Organizing and managing information systems (Tutorial)	
Students' groups (No .of students)	02 & 01 (65 students)		03 & 02 (61 students)	
Information sources by language	Language of instruction	Foreign language	Language of instruction	Foreign language
Subtotal Season 2	32	0	28	28
Total Season 1 + Season 2	221	0	184	184

Fig.1. Use of information sources in students' assignments by language for the two academic years 2022-2023 (Season 01) 2023-2024 (Season 02)

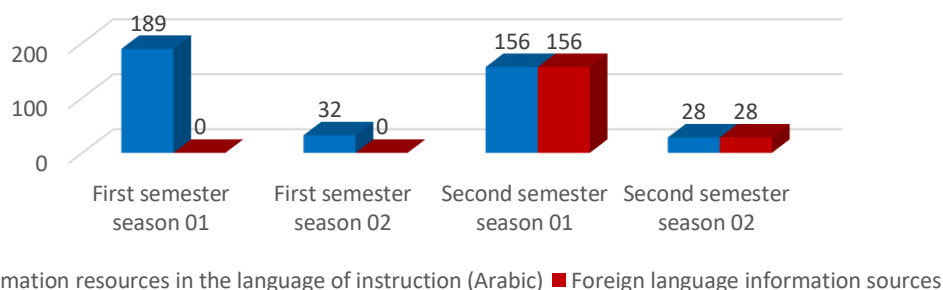


Table 02 and the Fig.1. display the results of the field experiment and demonstrate that the assignments from the students's activity in the first

semester of the two academic years serve as a control group, as no variable was inserted. We left the students to complete their work as it was, which was

considered a pre-measurement; we did not record their use of information sources in a language other than the instruction language. This contrasts with the assignments completed by the same students representing the experimental group during the second semester of the same two academic years. The teacher's role was included as an independent variable (external influence), embodied in the motivation that includes positive

reinforcement through additional points (reward) when using at least one reference in a foreign language of the student's choice, and negative punishment represented by deleting points for not using a source of information in a foreign language. As a result, all assignments included at least one source of information in a language other than the language of instruction, as shown in the following table:

Table 3. Source or sources of information in a foreign language used in students' assignments during the second semester of the two academic years, (Season1+Season2)

Language	Repetitions Season 1	Percentage Season 1 (%)	Repetitions Season 2	Percentage Season 2 (%)	Total Repetitions Seasons 1 + 2	Percentage Seasons 1 + 2 (%)
English	109	69.87	20	71.43	129	70.11
French	46	29.49	8	28.57	54	29.35
Spanish	1	0.64	0	0	1	0.54
Total	156	100	28	100	184	100

As shown in Table 3., based on the data of the two academic years, the use of information sources in English language dominated students' assignments, with a percentage exceeding 70%. Information sources in French language came in second, with a percentage reaching 29.35%, and the percentage of information sources used in assignments in Spanish language was only 00.54%.

This reliance on information sources in the English language is similar to the samples of some studies that showed their belief that English is a language of science and an intermediary language (Lingua Franca) between researchers from different languages worldwide (Kirkpatrick, 2010). According to Kuhlthau's (2014) model of information search process, this belief enters into what is known as students' sensorial (emotional) and intellectual

(cognitive) aspects and hints to them that search results in English are better than any other language, which constitutes an incentive to use this language in searching for and retrieving information. It is also logical that French came in second and was among the information sources students relied on to complete their assignments, due to the nature of students' formation in their educational careers, dealing with this language begins in primary school.

7.2 Focus groups results discussion

To maintain homogeneity, two focus groups were created; one group included students who obtained a baccalaureate degree in the Foreign Languages branch (Group 01), while the second group included students who obtained a baccalaureate degree in the Philosophy branch (Group 02). We randomly selected members of each group, ensuring they had

completed and submitted the assignments resulting from the professor's intervention in the second semester of the academic year 2022-2023 (Season 1).

7.2.1 Demographics of the two focus groups

Table 4. Gender and age of students participating in the two focus groups

Group	Gender			Age group			
	Female	Male	Total	17-20	21-24	25-28	Total
Group 01	9	2	11	11	-	-	11
Group 02	7	4	11	11	-	-	11

As indicated in Table 4., all students participating in the discussion were under twenty-one years of age, with a female majority in both groups. Considering that gender is a nominal variable that has no quantitative meaning, the number of females or males has no statistical effect, and there is no distinction between them in the study.

The members of Group 01 were asked about their level in the foreign languages acquired before the language of specialization, which is French and English, and the answers were as follows:

7.2.2 Focus group 01 discussion results:

- Group 01 students' level in French and English

Table 5. Group 01 students' level in foreign languages (French and English)

Language level	French	Percentage (%)	English	Percentage (%)
Weak	1	9,91	3	27,28
Intermediate	2	18,18	2	18,18
Good	8	72,72	4	36,36
Proficient	-	-	2	18,18

As shown in Table 5., it is clear that the students who obtained a baccalaureate in the foreign languages branch have a better level in French than English; this follows the educational context, considering that the French language is a subject that was studied for three years before learning the English language, given that the individuals in Group 01 did not study English in primary school, without

forgetting that the French language is a fundamental subject in the branch that they studied in secondary school. It is considered a second language in Algeria for historical reasons related to French colonialism.

- Group 01 students' level in specialized languages

A question was asked in group 01 about the level of foreign languages (the

language of specialization), and the answers were as follows:

Table 6. Group 01 students' level in foreign languages (specialization language)

Language	Weak	Intermediate	Good	Proficient	Total language	Percentage language (%)
German	-	1	6	3	10	90,91
Spanish	-	1	-	-	1	9,09
Total level	-	2	6	2	11	100
Percentage level (%)		18,18	54,55	27,27		

Table 6. notes that the majority of participants in Group 01 majored in German, at a rate of 90.91%, and there is no student from Group 01 with a weak level in the languages of specialization. Most of the answers expressed their good level in the languages of specialization, at a rate of 54.55%, followed by the Proficient level at 27.27%, and finally, the Intermediate level at 18.18%.

Table 7. Professors providing the speciality's terminology in foreign languages to students' group 01

Answer	Repetitions	Repetitions (%) Percentage	Language Repetitions	Language Percentage (%)
Yes	9	81,82	- French (06) - English (03)	66,67 33,33
No	2	18,18	-	-
Total	11	100	9	-

Based on the data in Table No. 07, the majority of students in Group 01, estimated at 81.82%, acknowledged that professors provide them with the essential terms in the foreign languages of the subject they taught, which are represented in each of the following two languages:

- French, at 66.67%, which not only reflects the reality of the education pattern

- Professors providing the speciality's terminology in foreign languages to students' group 01

Group 01 members were asked if their professors provided them with specialty terminology in multiple languages. The answers were as follows:

of the majority of Algerian university professors, who relied on the French language or alongside Arabic in Algeria but also reflects their reliance on information sources in French in collecting scientific material to prepare lessons and learning activities directed at students;

- English, at 33.33%, reflects some professors' attempts to adapt to a new

reality that includes research and publishing, in which it is preferable to rely on English instead of French.

- Group 01's search for information in multiple languages

A question was asked in Group 01 if its members search for information in multiple languages, and their answers were as follows:

Table 8. Group 01's search for information in multiple language

Answer	Repetitions	Repetitions (%) Percentage	Reasons	Reasons Percentage (%)
Yes	1	9,09	-	-
No	10	90,91	- Requires extra effort (08) - We do not have a translation for the terms (02)	75 25
Total	11	100	10	-

As shown in Table 08, it appears that the vast majority, estimated at 90,91% of the members of Group 01, do not search for information that falls within the study requirements in a language other than the language of instruction for several reasons, the most important of which is that the process of searching for information in multiple languages constitutes an additional burden for 75% of them, which is considered a repellent factor. In comparison, the remaining 25% complained about their lack of terminology

in other languages, which is essential to carry out any search process in a language other than the language of study.

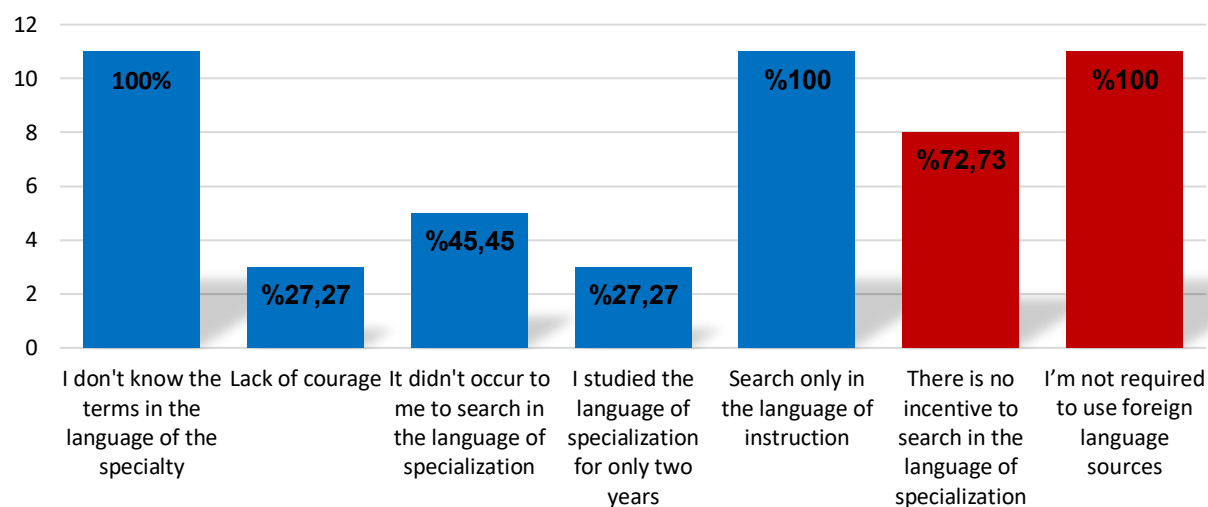
- Group 01 barriers to searching for information in the language of specialization

Group 01 members were asked what prevented them from searching for information in the language of their specialty, and their answers were as follows:

Table 9. Group 01's barriers to searching for information in the language of specialization

Answers	Repetitions	Percentage (%)
I don't know the terms in the language of the specialty	11	100
Lack of courage.	03	27.27
It didn't occur to me to search in the language of specialization.	05	45.45
I studied the language of specialization for only two years.	03	27.27
Search only in the language of instruction.	11	100
There is no incentive to search in the language of specialization.	08	73.72
I'm not required to use foreign language sources.	11	100

Fig.2. Group 01's barriers to searching for information in the language of specialization



As indicated in Table 9. and Fig.2., the answers of focus group 01, which includes students who obtained a baccalaureate degree in the Foreign Languages branch, can be divided into two categories:

- A category related to language and its barriers, where all group members, in their opinion, it is not possible to carry out the process of searching for information in the language of specialization without terms that are correctly translated into the language in which the search is to be conducted, noting that both German and Spanish are languages that first-year humanities professors, for the academic year 2022-2023, do not master. They also all agreed that research in the language of instruction is sufficient for them. Additionally, nearly half of the group members (45.45%) did not think of researching in the language of specialization; the latter, did not search with it by 27.27% of the group members because, according to them, they have only studied it for two years, and in their thought, it does not meet their need for information as Arabic (the language of instruction) or English or French, which

accompanied them in almost all stages of their learning. 27.27% also expressed that they lack courage and have a block, which is the fear of searching for information in their language of specialization without any advantage. This indicates an absence of encouragement to confront these barriers and assistance that boosts confidence when searching for information in other languages.

- A category related to motivation, where all members of the group agreed that none of the professors asked them to use sources in a foreign language to complete assignments. Also, within the same group 01, their percentage is 72.73%, which represents the majority of participants, they acknowledged that searching for information in the language of specialization requires additional work without any expected benefit. What is meant here, if our interpretation is correct, is the reward that has several forms, including, for example: praising the student in front of his colleagues.

- Techniques used in Group 01 during the information search process

Group 01 was asked about the techniques used in the information

search process, and their answers were as follows:

Table 10. Techniques used in Group 01 during the information search process

Search Technique	Repetitions	Percentage (%)	How it expressed
Natural phrase	11	100	Using the assignment title
Other	-	-	-
Total	11	100	

Table 10. reveals that all members of Group 01 acknowledged that the only technique used, whether in information institutions or on the Internet, is to rely on the entire title of the assignment as a starting point for information searches. This method is a search technique called Bingo, named after the famous game in North America. It is compatible with inquiries that cover a single concept with a whole phrase, regardless of its type (Drabenstott, 2004). This technique has

specific uses and is not the only one, especially with search engines, but it is the most common among untrained researchers (لعقون، 2017).

- Groupe 01's Tools used to translate foreign language information

Group 01 members were asked what they used to translate information sources in foreign languages retrieved from the research process, and their answers were as follows:

Table 11. Groupe 01's Tools used to translate foreign language information

Tools	Repetitions	Percentage (%)	How to
Automatic translation	8	72.73	Using Google Translate app (2) Using Google Translate site (6)
Dictionary	1	9.09	Available in the faculty library
Help from others	1	9.09	Meant the father
Self-translation	1	9.09	-
Total	11	100	

According to Table 11., despite the presence of some tools used by the participants in the focus group discussion of Group 01, which were represented by personal effort, dictionaries, and the assistance of another party (Father's help)

at a rate of 09.09% for each of them, the majority of the group members, estimated at 73.73%, used automated tools to help them translate the content of the information retrieved from the information search operations. The results showed that

the Google Translate application on smartphones was the least used through the answers of 02 individuals out of 08, i.e., 25.00%, compared to the Google Translate site, which came first through the answers of 06 individuals out of 08, i.e., 75.00%; this is due to the nature of completing assignments that require programs for editing texts and tables, which are more comfortable for the student when it is installed on the computer; the latter does not lack a browser, where it is easy for the student to work simultaneously between

these programs and the browser in all stages of the information search process, from searching, retrieving, translating, and editing.

7.2.3 Focus group 02 discussion results - Group 02 students' level in French and English

The members of Group 02 were asked about their level in the foreign languages acquired before the university, which is French and English, and the answers were as follows:

Table 12. Group 02 students' level in foreign languages (French and English)

Language level	French	Percentage (%)	English	Percentage (%)
Weak	7	63.64	4	28.27
Intermediate	3	27.27	6	18.18
Good	1	72.72	1	36.36
Proficient	-	-	-	-

Based on Table No. 12, it is clear from the percentages that the level of the individuals in Group 02 in foreign languages is relatively weak, with a difference in favor of the English language. This weakness can be attributed to the nature of the formation of the Philosophy branch, which requires more than just knowledge of the language. It is based on a deep understanding of ideas, and this cannot be achieved with the level of philosophical texts except through the language of instruction (Arabic), which limits their acquisition of foreign language skills. English's superiority over French in the discussion group is not logical when taking into account the educational context in Algeria for foreign languages that the members of Group 02 went through, which

favors the French language, that latter supposed to be studied and dealt with by the student in all stages of education. Some literature has attributed the lack of interest of many students in the Algerian south in learning French to various backgrounds, including: the dominance of the English language in global thought through various media, most notably the Internet, and historical colonial reasons (بن غزالة، 2018). If our interpretation is correct, the reason could also be the deficiency that the southern regions suffer from in framing and teaching foreign languages in general and the French language in primary schools in particular.

- Professors providing the speciality's terminology in foreign languages to students' group 02

Group 02 members were asked if their professors provided them with specialty terminology in multiple languages. The answers were as follows:

Table 13. Professors providing the speciality's terminology in foreign languages to students' group 02

Answer	Repetitions	Repetitions (%) Percentage	Language Repetitions	Language Percentage (%)
Yes	10	90.91	- French (10)	100
No	1	9.09	-	-
Total	11	100	10	-

As displayed in Table 13, the majority of students, estimated at 90.91%, stated that professors provide them with the most important terms of the subject taught in a foreign language, the latter being French at 100.00%. This is a logical percentage that reflects the reality of the formation pattern of the majority of Algerian university professors, which relies in many of its aspects on the French language.

- Group 02's search for information in multiple languages

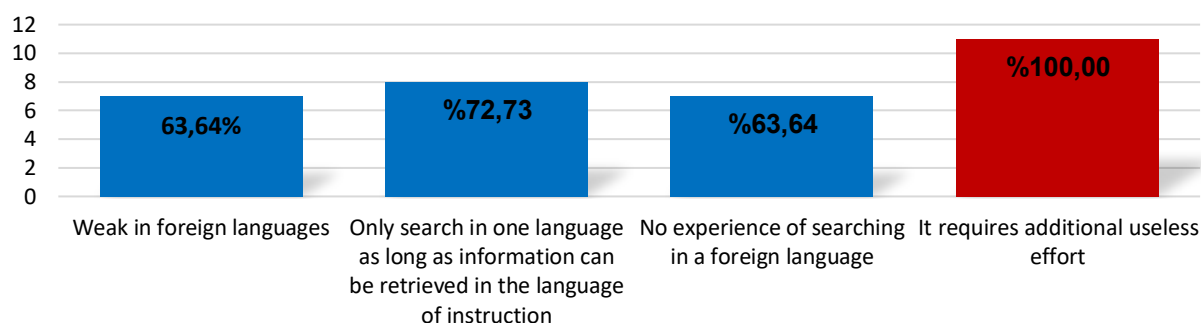
A question was asked in Group 01 if its members search for information in multiple languages, and their answers were as follows:

Members of Group 02 were asked if they search for information in multiple languages, and their answers were as follows:

Table 14. Group 02's search for information in multiple language

Answer	Repetitions	Repetitions (%) Percentage	Reasons	Reasons Percentage (%)
No	11	100	- Weak level in foreign languages (07) - Only search in one language as long as information can be retrieved in the language of instruction (08) - No experience of searching in a foreign language (07) - It requires additional useless effort (11)	63.64 72.73 63.64 100
Total	11	100	-	-

Fig. 3. Group 02's Reasons not to search for information in a foreign language



As demonstrated in Table 14 and Fig.3., it reveals that all students belonging to the focus group 02, which includes students who have obtained a baccalaureate degree in the Philosophy branch, do not search for information, which is part of the study requirements, in a language other than the language of instruction, for several reasons that can be divided into two categories:

- A category related to language and its barriers, over half of Group 02 members, estimated at 63.64%, expressed that their weak level in foreign languages hinders their ability to search for information in another language and discourages them from considering it. The same percentage of Group 02 members stated that they had no experience searching for information in

a foreign language. Furthermore, most members, estimated at 08, or 72.73%, do not view searching in a foreign language as useful as long as information can be retrieved in the language of instruction to meet their information needs;

- A category related to motivation, where Group 02 members find the process of searching for information in multiple languages to be precluded, as it represents an additional, useless effort.

- Techniques used in Group 02 during the information search process

A question was asked of members of Group 02 about techniques used in the information search process, and their answers were as follows:

Table 15. Techniques used in Group 02 during the information search process

Search Technique	Repetitions	Percentage (%)	How it expressed
Natural phrase	10	90.91	Using the assignment title
Other	1	9.09	Assignment title terms as a start and then go deeper
Total	11	100	

According to Table 15., most Group 02 members, estimated at 90.91%, acknowledged that their only technique used in the information search process was

to rely on the assignment title. This method is a search technique called bingo, which was discussed with the results of Table 10. The bingo technique was not the only

technique used by the members of the group focus 02; one member (09.09%) stated that he uses the terms of the assignment title as a start and then delves into the results until reaching the information that serves the search to retrieve it. This technique of information search called citation pearl growing is used with search engines to expand the information retrieved from previous search results by browsing from one article to

another related to the homework topic or moving from one citation link to another or through similar pages in the search engine (Laqun, 2017).

- Group 02's Steps for searching in a foreign language

Members of Group 02 were asked about the methods used to search for information in a foreign language, and their answers were as follows:

Table 16. Group 02's Steps for searching in a foreign language

Answers	Repetitions	Percentage (%)
Translate the assignment title	11	100
Total	11	100

As shown in Table 16, all members of focus group 02 agreed that the first step in searching for information in another language is translating the assignment title into the target language. The assignment title is a set of terms that sets the stage for what the assignment content should include. Thus, translating the assignment title into the target language helps narrow the scope of the search, which increases the

chances of finding relevant information sources.

- Groupe 02's Tools used to translate foreign language information

A question was asked of members of Group 02 about what they used to translate information sources in foreign languages retrieved from the research process, and their answers were as follows:

Table 17. Groupe 02's Tools used to translate foreign language information

Tools	Repetitions	Percentage (%)	How to
Automatic translation	11	100	Using Google Translate app (3) Using Google Translate site (8)
Total	11	100	

Based on the data in Table 17, all members of Group 02 used automated tools to help them translate the content of the information retrieved from information searches in foreign language. The results

showed that the Google Translate page came first with the answers of 08 individuals out of 11, i.e., 72.73%, while the Google Translate application was the least used with the answers of 03

individuals out of 11, i.e., 27.27%. The interpretation of the results of this table is similar to the interpretation of the results of Table 11.

7.2.4 Comparison of focus groups discussion results 01 and 02

- **Level of foreign languages:** The results revealed that the members of Group 01 had a better level in foreign languages, particularly French, compared to the members of Group 02, who obtained a baccalaureate degree in the Philosophy branch. The latter group faces more significant challenges in foreign languages, particularly French, due to its weaker level compared to English;

- **Level of the language of specialization:** This was a unique question for Group 01, as its members studied foreign languages in addition to French and English, and not a single one of them indicated that their level of the language of specialization was weak;

- **Professors providing the speciality's terminology in foreign languages:** The majority of students participating in Group 01 and Group 02, estimated at 86.36% (19 out of 22), stated that professors provide them with specialized terminology in other languages, with French coming first at 84.21% (16 out of 19) and then English at 15.79% (3 out of 19). Note that terminology, in any language, is important for carrying out information searches;

- **Searching for information in multiple languages:** Due to language barriers and a lack of motivation and incentive, the majority of students in both groups, estimated at 95.45% (21 out of 22), do not search for information that meets the study requirements in a foreign language;

- **Techniques used in information search processes:** According to results, 95.45% of

students in both groups use only one technique in all information search processes, which is evidence that they are not trained in various information search techniques, neither through educational programs nor through self-training;

- **Steps followed to search in a foreign language:** A question that was unique to Group 02 due to the weakness expressed regarding the level of its members in foreign languages, and they all agreed to follow one step, which is by translating the title of the assignment;

- **Tools used in translation:** The majority of students, estimated at 86.36% (19 out of 22) from both branches, rely heavily on the automatic translation of information sources retrieved in foreign languages, especially those available via the browser. This reflects the lack of reliance of Group 01 members on their language skills and the weak level of foreign languages among Group 02 members.

8. Study findings discussion

8.1 Discussion field experiment results (Discussion results of the first hypothesis)

Through the results of the field experiment, it was shown that the independent variable represented by the teacher's role had a positive and clear impact on the dependent variable represented by language barriers, as the teacher's intervention was able to remove them, by using two elements of behavioral teaching strategies, represented by both positive reinforcements embodied in the reward that eases the students' burden of the additional effort required to go through the process of searching for information in a foreign language, and negative punishment by deleting points in

the event of non-compliance with the requirements, as it was sufficient to motivate and push all students (100%) to overcome language barriers in completing the research and assignments that are part of the learning activities they were assigned to, using at least one source of information in a foreign language of the student's choice.

Based on the above and through the results of the field experiment recorded in Table No. 03, which show apparent differences between the control group and the experimental group in searching, retrieving, and using information sources in foreign languages, it can be stated that the first hypothesis, which states that "the professor has a positive role in helping students overcome language barriers during information searches." has been proved.

8.2 Discussion of focus groups 01 + 02 results

8.2.1 Discussion results of the second hypothesis

Established on the data in Tables 05 and 06, which show a reasonable level in three foreign languages for individuals who have obtained a baccalaureate degree in the Foreign Languages branch and belong to focus group 01, in addition to the data in Table No. 12, which showed a weak level of foreign languages in focus group 02, whose members have obtained a baccalaureate degree in the Philosophy branch, and despite the data in both Tables 07 and 13, which show that professors provide students with the most important terms in the subjects taught in more than one foreign language, which is an essential step to start the process of searching for information in another language. Almost

all members of the two groups, estimated at 95.45% (21 out of 22), regardless of their level in foreign languages, do not search for information that falls within the requirements of the study in a language other than the language of instruction for several reasons, some of which are related to motivation, as if searching in the language of study is sufficient for them and meets their need for information, and that searching in multiple languages requires additional time and effort that is unnecessary because it is without incentive or benefit in Their view, including what is related to language and its barriers, such as a weak level in foreign languages, or it did not occur to him, or no previous experience, or lack of courage to search for information in multiple languages.

Founded on the above, the second hypothesis, which states that "A student's proficiency in more than one language helps overcome language barriers that hinder searching for information in multiple languages," has not been proved.

8.2.2 Discussion results of the third hypothesis

Based on the data in Tables 11 and 16, it is clear that the majority of students in both focus groups 01 and 02, estimated at 81.82% (18 out of 22), even if some of them have a good level or higher in foreign languages, resort to using automated tools to help them translate the content of information sources retrieved from a search in foreign languages, to allow them to quickly and free of charge obtain content from a language they do not master into an understandable language, especially when dealing with large amounts of academic texts, where the use of Google products

dominated in this aspect with preference for its products linked to the browser.

From the above, it can be stated that the third hypothesis, which states that “Automatic translation facilitates the removal of language barriers during the search process,” has been proved.

9. Conclusion

The findings from this study highlighted the challenges posed by language barriers in higher education contexts, especially when it comes to information search processes, where it showed the dearth of use of academic sources in multiple languages, which limits students’ ability to explore more comprehensively the topics and materials studied provided by information-rich sources, particularly those available on the Internet. The positive role of the professor in overcoming these barriers and obstacles to implementing information search processes was proven by following an effective teaching strategy, and it showed that students, whatever their level in foreign languages, resort to using the tools provided by technology to translate the content of information sources into languages they are not fluent in or do not understand. From the principle that the study should not only identify the phenomenon and its effects but also propose workable solutions to eliminate or mitigate its negative effects, considering the surrounding environment and available resources. Among the proposals:

- Including subjects in the groundwork courses specifically for training students on all information search techniques in various environments, both traditional and modern;

- Including subjects in the groundwork offerings taught in foreign languages that develop interaction with diverse sources of knowledge;

- Providing students with the terms of the assignments they are assigned in languages other than the language of instruction;

- Support and encourage students to learn independently to improve their foreign language skills, which helps them overcome language barriers individually;

- Training students on how to use automatic translation effectively and in a balanced manner so that this use becomes part of the language learning process instead of relying entirely on it, so as not to weaken students’ language skills in reading and comprehension.

In conclusion, language barriers pose a significant challenge to achieving the maximum benefit from higher education. However, the joint efforts of professors and students can significantly reduce the adverse effects of the phenomenon under study. Through innovation in teaching methods and stimulating and enhancing students’ motivation, progress can be achieved towards a more comprehensive and global educational environment, where language becomes a means of accessing knowledge rather than a barrier.

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