Investigating the Challenges of Studying Science in English as a Medium of Instruction: Foundation Year Students' Perceptions at the University of Jeddah

Nasser Alasmari[*] iD
University of Jeddah
Jeddah, Saudi Arabia

Abstract. Undeniably, there has been a growing demand for the acquisition of the English language in recent decades. Despite the serious efforts made to intensively use this language in Saudi educational settings, its implementation as a medium of instruction (MOI) still poses challenges and obstacles to students, especially those specializing in scientific branches. The incorporation of English as a medium of instruction (EMI) at the tertiary level is not a new topic to be explored. However, revisiting such aspect of research is highly recommended. This is particularly true in unexplored areas, as is the case in the current research, which was conducted at the University of Jeddah. The study aimed to investigate the difficulties and challenges of studying scientific subjects in English as MOI as perceived by Foundation Year Saudi students. A sample of 113 newly admitted students participated in this study. Two main research instruments were qualitatively used for data collection, namely a questionnaire and semi-structured interview. The results indicate students' recognition of the importance of the English language. Results also indicate the existence of language-related difficulties, such as students' inadequate English proficiency, and other kinds of challenges to be major barriers impeding the effective incorporation of EMI. Such obstacles involve teacher competency level and insufficient course materials in addition to students' lack of motivation and interest. Some recommendations on how to overcome such obstacles are included in this paper.

Keywords: challenges; English as a medium of instruction; medium of instruction; perceptions; university students

1. Introduction
Nowadays, and almost around the world, educational systems have been internalized as a result of globalization, which is accompanied by the emergence

[*]Corresponding author: *Nasser Alasmari, nsalasmari@uj.edu.sa*

of English as the world language of the modern world. Its use has been expanding to include fields such as business, communication, tourism, commerce, and education. In fact, this trend has influenced policy-making in terms of language instruction. Many educational institutions, especially at the tertiary level, have invested great effort to incorporate English as a medium of instruction (EMI) in many subjects. This incorporation is, in fact, attributed to the use of English as a lingua franca of academia and its recognition as an international language. Its proficient acquisition is considered a cornerstone for the individual's success not only academically but also professionally at a later stage. In more particular terms and in order to satisfy the requirements of and keep up with the changes of the 20th century, the Saudi Ministry of Education introduced English as foreign language to be taught in secondary schools in Saudi Arabia in the sixties (Al-Matrafi, 2018). From that time on, the English language has been gradually and explicitly promulgated at all levels of the Saudi educational system, including the primary level, in the year 2000 when it became a mandatory subject from Grade 4.

At the tertiary level, most Saudi universities have created English departments in the faculties of arts, languages, and translation. Al-Zahrani and Rajab (2017) discussed a few aspects regarding the important status of English in Saudi Arabia. They pointed out that successful communication between different people from different countries is the most important feature of cultural exchange, which cannot take place unless English is proficiently used. In other words, for a country to keep its prosperity and peace, learning foreign languages such as English as a world language becomes a must. Furthermore, English is widely used to keep up with the big changes and advancements in communication and information technology all over the world. "*English is a great asset to cope with state of the art technology which has spread worldwide*," as stated by Al Mukhallafi (2019, p. 209). This interest in the English language has spread across fields to include other specialties such as medicine, engineering, and science, where English has been introduced as the MOI. However, the introduction of EMI has posed certain challenges for Saudi students whose main concern is science subjects such as biology, chemistry, and computing, especially those with little knowledge of the language (Ryhan, 2014). The sudden incorporation of EMI is issuable to a certain extent. This necessitates the focus on the different challenges perceived by the students who are exposed to this language, Saudis in this case.

2. Research Objectives
Although use of the English language has been partly implemented in the science courses in Saudi secondary schools, students encounter difficulty understanding the content in the science textbook (Al-Badi, 2018). Therefore, the current research aims to contribute to the available literature on the incorporation of EMI at Saudi higher education settings by foregrounding the difficulties and challenges faced by Saudi students when learning scientific subjects in English as MOI. This research focused on students' perceptions towards these variables. The choice of perceptions is based on the claim of Bohner and Wanke (2002) that in social psychology, perceptions are considered to be the major determinants of behavior.

This may provide a clearer picture about the performance of students and an idea about the effective usefulness of this decision (i.e., the implementation of EMI).

3. Research Questions
Considering the above objectives, this research proceeds to answer the following questions:
1. How do science students perceive the implementation of EMI in their institution?
2. How do science students feel about the implementation of EMI in their institution?
3. What are the most common difficulties and challenges faced by science students when taught subjects in EMI?

4. Literature Review
4.1 The Importance of EMI
Dearden (2014) defined EMI as the use of the English language to teach subjects other than English itself in settings where the first language is not English. Sah (2020), in the same respect, described it as "*an instructional model of teaching non-English academic subjects through the medium of English in educational settings where English is not the mother tongue of most students, which aims to facilitate the learning of content knowledge [and] English skills*" (p. 1). Evidently, high proficiency in the English language is one of the most prominent 21st century skills an individual should acquire to succeed as a professional. This has, in turn, urged non-English-speaking countries to implement the English language as the MOI in educational settings, especially in universities. Vu and Burns (2014) justified this tendency by stating that "*the argument for establishing the programs of EMI is that it will improve the quality of English learning, when English learning is directly linked to content*" (p. 9). Sah (2020), on the other hand, foregrounded the importance of the English language and thus the necessity to incorporate it as an MOI in educational systems. To put it in his words: "*EMI is ideologically perceived as a means of acquiring the linguistic capital, often believed in providing access to the global economy; and, therefore, a liberating tool for socioeconomically minoritized groups*" (Sah, 2020, p. 1).

Similarly, Rao (2019) asserted that the English language is a widely used language as it has spread all over the world to reach many sectors and domains, such as trade, education, science, technology and innovation, internet, transport, and banking. Rao (2019) concluded that,

> "*English occupies a unique place as it is the language that is so extensively used and so firmly established as a dominant global language in the above mentioned fields and the dominance of English has become like a snowball that is too big to prevent.*" (p. 66)

In terms of the position of the English language in Saudi Arabia and with reference to Article 50 of the Educational Policy in the country, Saudi students should master at least one foreign language that is used as a tool to communicate with others from different cultures. This will enable them to contribute to the message of Islam and to serve humanity. Policy makers and educationalists opted for the English language to achieve such goal. Al-Seghayer (2012) claimed that English has both a strong and a conspicuous presence in educational settings in

Saudi Arabia and that its adoption as an MOI in many institutions and universities is proof of its utility and importance.

4.2 The Implementation of EMI

Given the recognized position of the English language, many countries where English is a second or foreign language have started to implement its usage not only in academic settings but also in media, trade, and companies. Marsh (2006) indicated that a big number of educational settings made serious attempts to employ EMI between the years 1995 and 2005, where use of English started to sweep across educational systems at a global level. At present, there has been an increasing number of courses in universities taught in English. Such courses include business, computer science, chemistry, and biology, to name a few. According to Graddol (1997), EMI adoption has long-term results. It expands and fastens the use of the English language in developed and developing countries and generates a constituency of college students who are using English to communicate among each other.

In Nepal, for example, EMI was adopted in public schools over a long period. Phyak (2017) defended this decision by stating that "*public schools are adopting the EMI policy to help students develop their English language proficiency*" (p. 8). Kirkpatrick (2011) studied the implementation of EMI in educational settings throughout Asia and found that this incorporation is attributed to the positive perceptions of governments, policy makers, and educational professionals towards the English language. He continued by explaining that the English language is considered the key to achieve economic growth and prosperity and to access a great bulk of knowledge provided in the English language.

Referring to the Philippine experience, Gonzalez (2003, as cited in Kris et al., 2018), contended that English has been used as an MOI from primary to tertiary levels for decades. It is described as the key to understand all the other subjects. It is also a tool for learning that "*is highly valued not only because it is functional and practical, but more importantly, because it is an affordable item, a skill that can be used to increase one's position, respectability and marketability*" (Maramag & Batang, 2018, p. 88).

The recognized position of the English language and its successful inclusion as an MOI, especially, in many regions around the world urged many educational institutions at the tertiary level to introduce English as the only MOI. This introduction, however, has not been welcomed by many scholars, who have asserted that it would pose many difficulties and challenges not only for Saudi students but also for Arab students in general. Ryhan (2014), for example, complained that up to the post-secondary level, Saudi learners are not accustomed to the English language and enter universities with little knowledge of the language. This would, according to Alasmari (2021), definitely affect their learning and thus their educational performances and outcomes in a negative way. The same idea is conveyed by Ahmed (2020), who pointed out that despite the Saudi Ministry of Education's serious efforts to reform the educational system by infusing English in schools, there haven't been great educational outcomes as a result. Al-Kahtany et al. (2016) went further by asking whether implementing EMI is a necessity or hegemony. They argued that the decision to implement EMI

was "*taken by some universities without consultation with students or teaching staff, and stands in violation of the Saudi policy that states that Arabic should be the language of instruction*" (Al-Kahtany et al., 2016, p. 49).

4.3 Challenges in Incorporating EMI

4.3.1 Level of English language proficiency

Based on the perceptions of Philippine students at the university level, Maramag and Batang (2018) concluded that the use of English as the sole MOI is "a distressing experienc*e*" for many students. Even though they perform well in many subjects, they are depicted as underachievers when it comes to courses taught in English. These students also expressed their anxiety and fear in this respect, with Aina et al. (2013) warning that this situation may negatively affect their self-confidence and thus their learning outcomes. In addition, the students' academic achievement in subject areas such as science and technical education is strongly linked to their English proficiency level, because they face problems in comprehending the lecture content offered in English (Aina et al., 2013). Therefore, educationalists should know the level of students' English language proficiency before admitting them into these courses. According to Wilkinson (2013), "*poor language ability could jeopardize the whole language program*" (p. 7). In addition, Martinez (2016) assumed that the question of language ability does not involve students only but the lecturers as well. To quote him: "*there is a common concern expressed in the EMI literature, often tied to self-perception or bordering on plain conjecture, that students and/or faculty may fall short of possessing adequate English proficiency*" (Martinez, 2016, p. 224).

4.3.2 Content- or language-focused courses

Regarding content- or language-focused courses, Martinez et al. (2020) argued that despite the fairly well-established position of EMI at the tertiary level in almost every institution around the world, the question of whether to focus on content or on the language itself still persists and is posed by teachers and learners alike. In an attempt to an answer this question, Al-Kahtany et al. (2016) articulated that when investigating the students' perceptions of English as MOI, the focus should not be on the English language per se but on the performance of the students as English-medium students.

4.3.3 Students' readiness and motivation

Students' motivation and preparedness are also issues that may challenge the adequate learning process where English is an MOI. This may be firmly related to their proficiency level in the first place, as mentioned by Aina et al. (2013), who argued that studying courses offered in English is a "stressing experience". It may also be related to cultural considerations (Martinez, 2016). In Saudi settings, Ryhan (2014) observed the behavior of the Saudi students in classes where English is an MOI. Observed behaviors included "*students [being] inattentive, looking through the roof, chewing pens, and low turn outs which are the indications of loss of connection and communications between the students and the instructor*" (Ryhan, 2014, p. 140).

4.3.4 Resorting to the mother tongue

Ryhan (2014) summarized the situation of adopting EMI in the Arab world and in Saudi Arabia in more particular terms. The author stated that despite the effective use of English as an MOI in many universities, this experience is not without challenges and difficulties. Furthermore, the Arabic language is the MOI in the Saudi educational system from the primary to the secondary level, where all the subjects are delivered in Arabic. The sudden shift to use English as an MOI in the post-secondary programs confuses the students, especially those with poor English proficiency. In fact, the students "struggle" to comprehend the instructions given in the English language and to deal with this shift. Accordingly, these students end up being poor performers and low achievers. Ryhan (2014, p. 140) also warned that Saudi learners are "lost in translation" and frequently ask to use their mobile phones to translate English words into Arabic. In a Chinese context, Yang et al. (2019) also raised the same issue, as the informants in their study admitted to the use of Chinese to manage interactions.

4.3.5 Other challenges

Yang et al. (2019) examined the challenges experienced and adaptive strategies used by Chinese students in medical programs when English is an MOI. They identified three major issues, namely lack of resources and teaching materials; lack of experience of the teachers, who fail to teach medical humanities; and inappropriate classroom interactions and communications between teachers and students. The same authors reported that the students were, in fact, dissatisfied with the classroom instructions delivered by the teachers. The subject knowledge was not clearly explained in the needed depth because English was the MOI.

The lack of an efficient English preparatory program is also challengeable for students with scientific majors in Arabic educational settings. This is especially because of the sudden shift they witness from Arabic as the medium of instruction at the primary and secondary levels to EMI at the tertiary level (Al Zumor, 2019).

5. Methodology

5.1 Participants

A total of 113 students out of 230 (enrolled in the Foundation Year) contributed to the conduct of this research at the University of Jeddah at the beginning of the university year 2021–2022. All these subjects voluntarily completed the questionnaire through a link sent via email. All the participants were in their Foundation Year and their ages ranged between 18 and 21 years, with a mean age of 19. The sample consisted of 58 male and 55 female students who were admitted to the university after graduation from secondary school. All participants were freshly admitted students and chose to specialize in scientific branches.

5.2 Instruments

Two types of research instrument were qualitatively used for data collection, namely a student questionnaire and semi-structured interview. The questionnaire was the first instrument used for data collection. It comprised three main parts and used a five-point Likert scale ranging from 1 (*strongly agree*) to 5 (*strongly disagree*). The average response value for each statement on the questionnaire was calculated by dividing the response values of each participant by the statement (1 = *strongly disagree*/2 = *disagree*/3 = *neutral*/4 = *agree*/5 = *strongly agree*) and then

dividing it by the total number of participants (N = 113). It is worth noting that the same approach was autonomously used for each of the three parts of the questionnaire. The first part consisted of five items and had as objective to elicit the participants' general views on the implementation of EMI. The second also comprised five statements and aimed to identify the participants' affective perceptions of EMI. The third part, on the other hand, included 10 items and explored participants' views on the challenges and difficulties they faced when EMI is implemented.

To provide a more reliable weight to the current work, a second instrument was needed, namely the semi-structured interview. Interviews were mainly conducted to develop a better and deeper understanding of the EMI program and to elicit participants' views and feelings about EMI adoption in the scientific branch as well as to identify the difficulties they face in this case. Interviews comprised 10 questions and only 35 students from the questionnaire sample were randomly invited to participate in interviews due to time constraints. The interviews were audio-recorded and partially transcribed, to be thematically categorized for content analysis. The responses were coded and categorized to identify common themes (Miles & Huberman, 1994).

To determine the reliability and validity of the two instruments, pilot testing was done through cognitive interviewing. A sample of 10 Foundation Year students, other than the participants of the current research, volunteered to complete the questionnaire and sit for the interview. Their responses were analyzed. No major difficulties or errors with the questions were identified and only minor changes were made to improve the quality of the instruments.

6. Results and Discussion
The results from the questionnaire on the views of the participants on the implementation of EMI are indicated in Table 1.

Table 1: Results related to participants' overall perceptions of the EMI experience

Item	SD		D		N		A		SA	
	n	%	n	%	n	%	n	%	n	%
1. English is very important in higher education	0	0	0	0	0	0	10	11	103	90
2. EMI helps in future careers	0	0	0	0	0	0	13	12	100	88
3. The use of EMI is more advantageous than that of native language as MOI	88	71	20	23	5	6	0	0	0	0
4. The EMI suits my learning style	90	77	14	22	9	11	0	0	0	0
5. My understanding of the content is much better when lessons are delivered in English	92	80	11	12	10	8	0	0	0	0

The responses to the different items reflect a variation between the first two and last three items, where the average responses were 4 and 1, respectively. These results reflect the participants' confusion with the implementation of EMI. Statistically speaking, and despite the fact that they were completely convinced of the importance of English in their education and future career, 71% of the participants could not perceive its use as more advantageous than that of their native language. In addition, 77% strongly disagreed that EMI suits their learning styles. Most of the participants either disagreed or strongly disagreed (12% + 80%, respectively) that their understanding improves when English is the MOI. This finding is in line with that of Ahmadi (2017), whose informants believed that using English as MOI is an "unwelcome" experience that is a mere waste of time and considered it a "threat" to their mother tongue.

The thematic analysis of the semi-structured interview responses of the participants confirm the aforementioned results. It reflects the participants' dissatisfaction with EMI despite their realization of the importance of the English language worldwide and its vast invasion of the world. The participants expressed their preference of their mother tongue as MOI. This strong opposition to EMI may be attributed and directly linked to their proficiency level in English. The same finding was made by Yang et al. (2019), who argued that their informants were negative about their own proficiency to study science subjects in English.

Table 2 reflects statistics on the participants' feelings towards the implementation of English as an MOI.

Table 2: Results related to participants' affective perceptions towards EMI implementation

Item	SD		D		N		A		SA	
	n	%	n	%	n	%	n	%	n	%
6. The use of EMI boosts my interest and motivation to study	70	61	36	31	4	5	1	1	2	2
7. I feel more comfortable when English is an MOI for the science subjects	83	73	25	22	5	5	0	0	0	0
8. With the implementation of EMI, the classes become more enjoyable	100	88	13	12	0	0	0	0	0	0
9. EMI is a nice experience to learn science subjects	95	84	15	13	0	0	1	1	2	2
10. With the use of EMI, I feel ready to go through more autonomy-related activities	100	88	13	12	0	0	0	0	0	0

The results reveal that most of the participants did not feel happy and were not satisfied with the EMI experience. This discomfort is clear in that the replies to the different items shown in the table above show no variation, as the average response value was equal to 2 or even lower. In fact, most of the participants (73%) strongly disagreed that EMI increases their motivation to study. Most of them (83%) did not

feel comfortable with it. In addition, 88% of them did not feel that EMI makes the classes a more enjoyable setting for learning.

Similarly, the responses in the semi-structured interview confirm the participants' feeling of opposition towards the use of EMI. One of the participants expressed his lack of interest and even his anxiety by claiming that "*EMI is not only a bad way; it is also confusing … I don't know what to focus on … The teacher's instructions, the language, the content …*". This finding, however, contradicts what Siddiqui et al. (2021) reported. These authors found that many students in many countries have positive attitudes towards EMI. Turkish learners, for instance, prefer EMI because it facilitates their employability and future destinations.

Table 3 shows the participants' responses to the third part of the questionnaire, namely the different kinds of challenges they encounter when EMI is implemented.

Table 3: Results related to participants' perceptions towards the difficulties encountered when implementing EMI

Item	SD		D		N		A		SA	
	n	%	n	%	n	%	n	%	n	%
11. I find it difficult to understand the scientific content of the lecture because I am not proficient enough in the English language	0	0	0	0	0	0	70	61	43	39
12. I find it difficult to understand the lecture because I focus on understanding the English language itself	0	0	3	5	2	4	60	53	38	42
13. I find it difficult to understand the scientific content of the lecture because I often do not understand English technical terms and academic jargon	0	0	0	0	3	5	70	61	40	34
14. I find it difficult to understand the scientific content of the lecture because the teacher uses English only without any translation into Arabic	0	0	10	12	0	0	60	49	43	39
15. I find it difficult to understand the scientific content of the lecture because I am not allowed to use devices to translate difficult words into Arabic	0	0	9	10	0	0	50	55	44	35
16. I find it difficult to understand the scientific content of the lecture because there is no code-switching between English and Arabic as a medium of communication from the part of the teacher	0	0	0	0	0	0	105	92	8	8
17. I find it difficult to understand the scientific content of the lecture because the materials and books are in English	0	0	0	0	0	0	70	61	43	39

18. I find it difficult to understand the scientific content of the lecture because the teacher him-/herself does not know how to explain it in English	0	0	11	15	0	0	56	55	42	35
19. I find it difficult to understand the scientific content of the lecture because I am not used to EMI	0	0	6	10	4	8	62	56	41	26
20. I find it difficult to understand the scientific content of the lecture because I am not motivated to learn with EMI	0	0	7	6	2	4	70	61	34	29

The average response to the first 5 items (11–15) was almost 4 or higher. All the statements present language-related issues. Most of the participants found it difficult to understand the lecture for such reasons as their poor proficiency level in English, the perplexity to focus on content or the language, and the difficulty to understand the English technical terms and academic jargon. The same findings were identified by many scholars in different settings. Martinez et al. (2020), for example, insisted that focusing on the content or the language during the lecture is still issuable in most EMI classes. More interestingly, the students informing this research voiced their need to use their mother tongue to understand the lectures. In effect, 92% of them argued that the difficulty they encounter stems from the absence of the use of code-switching. For this item, the average response was almost 2, which reflects the strong disagreement of the participants to solely use English and their preference to better alternate between the two languages. The same idea was articulated by Ahmed (2020), who elicited students' views about using Arabic when teaching English and concluded that Saudi learners in his study believed that the potential of the mother tongue as a classroom resource in foreign language classes is great. Similarly, Schweers (1999) wrote that "*recognizing and welcoming their own language into the classroom as an expression of their own culture could be one way of dispelling negative attitudes toward English and increasing receptivity to learning the language*" (p. 37).

Concerning the results of the interviews in this respect, it is worth mentioning that the participants' responses were inductively approached to be semantically analyzed. In fact, the most frequent and recurrent ideas and themes were assembled and are presented in Table 4 in terms of frequency.

Table 4: Challenges of implementing EMI as indicated by participants in interviews

Theme	Frequency
Idioms and figurative meanings	34
Difficult vocabulary	60
Teachers' competence	24
Teachers' inability to manage the course	27
Teachers' inability to explain the course	36
Inaccurate English courses	39
Insufficient teaching materials	41
Lack of interest and motivation	53

As the table above indicates, the Saudi students participating in the interview voiced the linguistic challenges they face when EMI is incorporated. An example is the great number of idioms and figurative meanings in English as well as the bulk of unfamiliar vocabulary which negatively affects comprehension of the course content and thus their assessments.

Participants also complained about the teachers' readiness and competence level. In fact, most of the participants noticed the teachers' inability to manage the course content. These teachers, according to them, are incapable of accurately monitoring student comprehension and organizing or designing the content of the lectures. Learners' dissatisfaction with teachers was also mentioned by Yang et al. (2019), who attributed this partially to the ignorance of teachers and learners of adaptive strategies such as the employment of alternative textbooks as well as self-learning skills. According to the same authors, the use of these strategies offers insights on how other EMI programs may improve their implementation of English programs.

Furthermore, the participants in this research argued that the English courses are not appropriate and that they are simply parachuted into the curriculum without any consideration of the students' level of English proficiency. These insufficient and inappropriate teaching materials lead to the failure of the students to interact. In addition to the inadequate resources available, the participants raised the problem of teaching methods to deliver the courses where English is the MOI. These findings align with those of Bradford (2016), who claimed that "*structural challenges in the EMI program were related to overall programmatic coherence and included issues related to an insufficient number of EMI courses*" (p. 4).

The participants also spoke plainly about their own lack of motivation and interest to receive lectures in English, which stood out as another challenge for them. This bears many similarities to the findings of Al Zumor (2019), who related that "*using English language as the medium of instruction and assessment causes anxiety, frustration, tension, fear, embarrassment and, ultimately, poor educational outcomes*" (p. 74). This may be justified by the sudden inclusion of English as an MOI and the low proficiency level of the students (Alamri, 2008).

7. Limitations
Despite its important findings which led to the insightful recommendations listed below, the current research suffered from a few limitations which should be considered in future work. First, it solely relied on what student participants reported. Teachers also play an active role in the learning process and thus their perceptions are as important as that of their students. As pointed out by Siddiqui et al. (2021), the effectiveness of the EMI policy cannot be measured through the attitudes of students only; the views of stakeholders such as teachers should also be accounted for. Second, the two instruments used for data collection were based on personal accounts, which are the impressions and interpretation of the participants. The absence of classroom observation, here, could be a drawback.

8. Conclusion and Recommendations

The results of the current research show that the participants were aware of the importance of the English language worldwide, which affirms that the adoption of EMI, especially at the tertiary level, is seemingly inevitable. Thus, instead of substituting it or removing it altogether, it is better to take serious measures to address the issues that make its implementation an obstacle. This is not only the role of one party in the educational system, but collaboration between all the parties involved is urgently needed. Yang et al. (2019) reckoned that the EMI programs are not easy to apply in non-English-speaking countries. This situation is clearly confirmed within Saudi educational settings, as indicated by the results of the current research. For such programs to be a success, the co-operation of all educational members, including students, teachers, and faculty members, is highly recommended. Accordingly, faculty administrators and decision-makers who are directly involved in the management of the higher education system should consider the needs and the perceptions of the Saudi students before a decision is made of whether to implement an EMI program or not. In this respect, a needs analysis of the learners becomes indispensable. Besides, light should be shed on the adaptive strategies both learners and teachers resort to when they face challenges and difficulties where English is an MOI. Further research is needed in this regard to determine whether learners use the same strategies and what the different influential factors are that contribute to the choice of a certain strategy and not another.

The results also indicate teachers' inability to manage and design courses. Flowerdew (2016) attributed this to the fact that these instructors surprisingly find themselves working with specific texts and genres for the different disciplines they are working with. Their role may be to help students with subject-specific language features, such as vocabulary, and other forms of specialized language use, which they themselves are not ready for. Therefore, their urgent training as practitioners to be able to teach English for specific academic purposes (ESAP) becomes mandatory.

What can also be inferred from the results of the current research is that Saudi students are not ready to receive lectures in EMI. Their preparedness becomes a must. Language programs to improve their language proficiency level, especially in the scientific domain, can only be helpful in changing their negative attitudes towards the language, which may help in the learning process in general.

One more important issue relates to the participants' reliance on their mother tongue, which was reflected through their preference for translation into Arabic and code-switching between the two languages (i.e., English and Arabic) during lectures. Despite the preferred approach of "English only" defended by the proponents of the communicative methodology, other researchers have started to encourage the use of the mother tongue, as it plays an important role to facilitate the learning process. The use of Arabic in EMI classes should be revised and thus research must be carried out in this regard to further confirm its effectiveness or show the opposite.

The Saudi students informing this research held positive views towards the English language and were aware of its importance as a world language, especially with globalization and internalization invading the whole world. They also recognized the importance of its acquisition as a main tool for their future career. However, and when it comes into practice, using English as an MOI is a stressful experience for which they were not prepared. This confusion and frustration are attributed primarily to language-related issues such as their proficiency level in English and the sudden inclusion of such programs without considering their views through needs analysis, for instance. Accordingly, anticipating and improvising the issues and challenges that may be caused by EMI incorporation and addressing them before its implementation are the right path for the learning process to take place adequately.

Acknowledgement

9. References

Ahmadi, Q. S. (2017). Unwelcome? English as a medium of instruction (EMI) in the Arabian Gulf. *English Language Teaching, 10*(8), 11–17. https://doi.org/10.5296/elr.v6i1.16424

Ahmed, E. Y. (2020). Using Arabic in teaching English to Arabic-speaking learners (from teachers' and students' point of view). *Education and Linguistics Research, 6*(1), 117−128. https://doi.org/10.5296/elr.v6i1.16424

Aina, J. K., Ogundele, A. G., & Olanipekun, S. S. (2013). Students' proficiency in English language relationship with academic performance in science and technical education. *American Journal of Educational Research, 1*(9), 355–358. https://doi.org/10.12691/education-1-9-2

Al Mukhallafi, T. R. (2019). English in Saudi Arabia: Status and challenges in the light of Prince Mohammed Bin Salman's Vision 2030. *International Journal of English Linguistics, 9*(4), 209–223. http://doi.org/10.5539/ijel.v9n4p209

Al Zumor, A. Q. (2019). Challenges of using EMI in teaching and learning of university scientific disciplines: Student voice. *International Journal of Language Education, 3*(1), 74–90. https://doi.org/10.26858/ijole.v1i1.7510

Alamri, A. M. (2008). *An evaluation of the Sixth Grade English Language Textbook for Saudi Boys' School* [Unpublished master's dissertation]. King Saud University.

Alasmari, N. (2021). Is internet reciprocal teaching the remedy for Saudi EFL learners' reading difficulties during the Covid-19 pandemic? *Journal of Education and e-Learning Research*, *8*(3), 324–332. http://doi.org/10.20448/journal.509.2021.83.324.332

Al-Badi, N. (2018). *Science literacy in Saudi Arabia through language analysis of a secondary school physics textbook* [Doctoral dissertation]. University of Newcastle. http://hdl.handle.net/1959.13/1394249

Al-Kahtany, A. B., Golam Faruk, S. M., & Al Zumor, A. (2016). English as the medium of instruction in Saudi higher education: Necessity or hegemony? *Journal of Language Teaching and Research, 7*(1), 49–58. http://dx.doi.org/10.17507/jltr.0701.06

Al-Matrafi, A. (2018). *Saudi technical college students and an English for Specific Purposes textbook: A cloze test based linguistic analysis* [Doctoral dissertation]. University of Newcastle. http://hdl.handle.net/1959.13/1394387

Al-Seghayer, K. (2012, December 11). Status and functions of English in Saudi Arabia. *Saudi Gazette*. https://saudigazette.com.sa/article/24861

Al-Zahrani, N. O. A., & Rajab, H. (2017). Attitudes and perceptions of Saudi EFL teachers in implementing Kingdom of Saudi Arabia's Vision 2030. *World*, *5*(1), 83–99. https://doi.org/10.5296/ijele.v5i1.10733

Bohner, G., & Wanke, M. (2002). *Attitudes and attitude change*. Psychology Press.

Bradford, A. (2016). Toward a typology of implementation challenges facing English-medium instruction in higher education evidence from Japan. *Journal of Studies in International Education, 20*(6), 339–356. https://doi.org/10.1177/1028315316647165

Dearden, J. (2014). *English as a medium of instruction: A growing global phenomenon.* Department of Education, University of Oxford. https://www.britishcouncil.es/sites/default/files/british_council_english_as_a_medium_of_instruction.pdf

Flowerdew, J. (2016). English for specific academic purposes (ESAP) writing: Making the case. *Writing & Pedagogy, 8*(1), 5–32. https://doi.org/10.1558/wap.v8i1.30051

Graddol, D. (1997). *The future of English? A guide to forecasting the popularity of the English language in the 21st century*. The British Council.

Kirkpatrick, A. (2011). English as a medium of instruction in Asian education (from primary to tertiary): Implications for local languages and local scholarship. *Applied Linguistics Review*,*2*, 99–120. https://doi.org/10.1515/9783110239331.99

Kris, E. A., Boyet, M., & Batang, L. (2018). Medium of instruction on student achievement and confidence in English. *TESOL International Journal, 13*(3), 88–99. https://files.eric.ed.gov/fulltext/EJ1247328.pdf

Maramag, A. K., & Batang, B. L. (2018). Medium of instruction on student achievement and confidence in English. *TESOL International Journal, 13*(3), 88–99. https://files.eric.ed.gov/fulltext/EJ1247328.pdf

Marsh, D. (2006). *English as medium of instruction in new global linguistic order: Global characteristics, local consequences* [Conference session]. Second Annual Conference for Middle East Teachers of Science, Mathematics and Computing, Abu Dhabi. https://archive.org/details/ProceedingsOfTheSecondAnnualConferenceForMiddleEastTeacher

Martinez, R. (2016). English as a medium of instruction (EMI) in Brazilian higher education: Challenges and opportunities. In K. R. Finardi (Ed.), *English in Brazil: Views, policies and programs* (pp. 191–228). EDUEL.

Martinez, R., Fogaça, F., & Diniz De Figueiredo, E. H. (2020). An instrument for English medium instruction (EMI) classroom observation in higher education. *Caderno de Letras,* (35), 221–234. https://doi.org/10.15210/cdl.v0i35.17352

Miles, M. B., & Huberman, A. M. (1994). *Qualitative data analysis: An expanded sourcebook* (2nd ed.). Sage. https://psycnet.apa.org/record/1995-97407-000

Phyak, P. (2017). Translanguaging as a pedagogical resource in English language teaching: A response to unplanned language education policies in Nepal. In H. Kuchah, & F. Shamim (Eds.), *International perspectives in teaching English in difficult circumstances: Contexts, challenges, and possibilities* (pp. 1–30). McMillan.

Rao, P. S. (2019). The role of English as a global language. *Research Journal of English (RJOE), 4*(1), 66–79. https://www.rjoe.org.in/Files/vol4issue1/new/OK%20RJOE-Srinu%20sir(65-79)%20rv.pdf

Ryhan, E. (2014). The role and impact of English as a language and a medium of instruction in Saudi higher education institutions: Students–instructors perspective. *Study in English Language Teaching, 2*(2), 140–148. https://doi.org/10.22158/selt.v2n2p140

Sah, P. K. (2020). English medium instruction in South Asian multilingual schools: Unpacking the dynamics of ideological orientations, policy/practices, and democratic questions. *International Journal of Bilingual Education and Bilingualism*, *25*(2), 1–14. https://doi.org/10.1080/13670050.2020.1718591

Schweers, C. W. (1999). Using L1 in the L2 classroom. *English Teaching Forum, 37*(2), 6–9.

Siddiqui, K. A., Syed, H., & Sahito, Z. (2021). Challenges and strategies of university students in English-medium instruction (EMI) classes: A case study. *Foro Educacional, 36*, 9–25. https://doi.org/10.29344/07180772.36.2544

Vu, N. T., & Burns, A. (2014). English as a medium of instruction: Challenges for Vietnamese tertiary lecturers. *The Journal of ASIA TEFL, 11*(3), 1–31.

Wilkinson, R. (2013). English-medium instruction at a Dutch university: Challenges and pitfalls. In A. Doiz, D. Lasagabaster, & J. Sierra (Eds.), *English-medium instruction at universities* (pp. 3–26). Multilingual Matters.

Yang, M., O'Sullivan, P. S., & Irby, D. M. (2019). Challenges and adaptations in implementing an English-medium medical program: A case study in China. *BMC Medical Education, 19*(15), 1–8. http://doi.org/10.7786/s12909-018-1452-3