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Arabicization in Higher Education: The Case of Medical Colleges in The Sudan

**Thesis submitted for the Degree of
Doctorate of Education**

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by

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ABSTRACT

This thesis explores language policies, language conflict and language-user attitudes toward arabicization which refers to the use of Arabic as a medium of instruction in teaching medicine in universities in the Sudan. It follows up these objectives: (1) To highlight the roots of arabicization and implemented language planning activities through document analysis. (2) To report on the advantages and disadvantages of both Arabic and English as media of instruction in teaching medicine in the Sudan. (3) To survey the attitudes of students and their instructors in the colleges of Khartoum, Omdurman and Gezira universities towards arabicization using two similar developed questionnaires and an interview for faculty members. The questionnaires were distributed to the students and faculty members in the three colleges to probe six factors: (1) The extent of use of languages of instruction (2) Readiness of the students to receive medical studies in English (3) The difficulties they face (4) English as a medium of instruction in medical colleges (5) Arabic as a medium of instruction in medical colleges (6) Students' preference of a language of instruction. The study utilized tables, charts and chi square tests to illustrate the attitudes of students and their faculty members.

The study has revealed that the attitude of most of the students and their faculty members were in favor of arabicization in principle. In fact, students showed support for the pedagogical benefits of Arabic like they can prepare and study in Arabic in less time than English. They can take more notes in Arabic than in English. The study has highlighted that Arabic as a native language of the students offers them a mighty and indispensable support for the ability to convey ideas, capacity for imaginative or creative thinking than the limited capacity given by the foreign language. Notwithstanding, English is reported to be very important for students' current medical studies and future career. The study emphasized that the language shift to Arabic should not lead to marginalize English in higher education in Sudan. A realization of the need of boosting the teaching of English in case of arabicization is fully implemented was present in the participants' responses. To conclude, the study has culminated in calling for benefiting from the successes of human resource development (HRD) in leading change in organizations in language planning and language policy implementation.

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List of Glossary/ Abbreviations

#	<u>Glossary</u>	<u>Meaning</u>
1	Arabicization	The use of Arabic as a medium of instruction
2	Arabization	The promotion of Arabic and Islamic culture
3	Group LC	A group of freshmen & sophomores in the studied colleges
4	Group UC	A group of juniors & seniors in the studied colleges
5	Khalwa	A Qu'ranic school for teaching Muslims' children the Quran.
6	Masid	A corruption of the word 'masjid' (mosque).
7	Mahdist	A Sudanese religious group who overthrew the Turk-Egyptian rule in 1885.

#	<u>Abbreviation</u>	<u>Refers to</u>
1	KH	Khartoum University
2	OM	Omdurman University
3	Gez	Gezira University

#	<u>Arabic Name</u>	<u>Lantinized/English Name</u>
1	Ali ibn Abbas	Hale Abbas
2	Abu-al-Qasim Al-Zaharwi	Albucasis
3	Ibn Sina	Avicenna
4	Ibn Zuhr	Avensoar
5	Ibn Maimon	Maimonds
6	Jabir ibn Haiyan	Geber
7	Al-Khawarizmi	Algorism, Algorithm
8	Al-Kindi	Alkindus
9	Al-Razi	Rhazes
10	Ibn Rushid	Averroes

Chapter One

Introduction

This is an exploratory study of language planning, language change and language conflict in a specific, unexplored context. It is about language-user attitudes towards a language policy. It attempts to explore the impact of a language change on medical students' studies, faculty members' delivery and their careers by eliciting and describing their perceptions of the change in the context of language policy in the Sudan. It sets out to analyze how the idea of this change flourished and why it became a concern and an important factor in forming education plans and policies.

1.1 The Background

The language change in this study is Arabicization. Arabicization and Arabization are two programs that could be carried out separately, though they are technically linked to each other. The former is concerned with the promotion of the Arabic language while the latter deals with the promotion of Arabic culture and identity. Both words are referred to in Arabic as *ta'rib*. The notion '*ta'rib*' or 'arabization' and 'arabicization' has come about during the struggle of Arab nationalism against two major foreign forces: first, the Ottoman Empire which ruled the Arab region for more than five hundred years, and the second, Western colonialism exemplified in the two main European powers, Britain and France, which ruled the area after World War I. The French have changed the culture of the areas they occupied (e.g. North African Arab countries & Lebanon) into theirs, while the British Rule has not touched the local traditions of the colonized countries (e.g. the Sudan) but it has left a strong linguistic influence. This was reported in Awoniyi's paper on mother tongue education: "While the French colonial policy emphasized the assimilation of African into what was regarded as the French 'universal culture', the British colonial policy was largely *laissez-faire*" (Awoniyi, 1976, p.35).

Thus, arabization and arabicization in these different types of colonialism have faced some difficulties. In the case of France, colonial French education prevailed, while in the former British colonies they are less challenged due to the British conservative policy of not interfering in local cultural issues.

Arab nationalism started as purely an intellectual movement with an interest in the revival of Arabic before the intellectual awakening triggered the political one which

always was strengthened by Western imperialism (Yazigy, 1994). The struggle continued against colonial powers and hence affected the minds and attitudes of the generations against everything relating to the West. Some of the Arab nationalism aspects are its attempts to eliminate the colonial languages and the educational system. Here the term ‘arabicize’ emerged, exactly, like the term ‘sudanization’ that appeared when the replacement of Egyptians, Syrians and later the British by the Sudanese nationals took place (see El-Gizouli, 1999, p.50). The other related term that appeared was Arabization which refers to the “desire to strengthen the deep-rooted traditions of Islam and of Arab Civilization and to maintain the bonds between religion and education” (Wheeler, 1966. p. 304). After independence, Arab countries tried to eliminate the impact of colonialism, including cultural and linguistic influence (Za’rou & Nashif, 1977). Henceforth, arabicization aimed at the declaration of Arabic as the official language of the state, the language of instruction, and the preparation of scientific and technical terminology. Seminars and conferences have been held to discuss arabicization, plans and logistics of its implementation, an account is provided in Chapter Two.

1.2 The Contextual Background

Syria was the first Arab state to use Arabic in teaching medicine before other Arab countries tried to implement the recommendations of the seminars and conferences held about arabicization. The second country that joined in the arabicization of higher Education was the Sudan, the site of this study. The Sudan is an African country bordered by nine countries and roughly lies between latitudes 4 and 22 north. Its area is about one million square miles and it has a population of 30 million. The demographic map shows that the largest group is Arab and the official language is Arabic. However, non Arabs use about 400 languages and dialects (Congress Library Online, 2002). Other estimates present 134 living languages and 8 extinct ones (Ethnologue Online, 2002). The former estimate may include variants and dialects.

The country faced domination by foreign forces. In 1821, it came under the control of the Turk-Egyptian Administration until the Mahdist regained independence in 1885. Then, the British conquered the Sudan on behalf of Egypt and as revenge for the murder of Gordon Basha, a governor of Sudan during the Turk-Egyptian reign. The British and Egyptians formed the Condominium government that ruled the country until independence (1898-1956). These phases of the country’s history have a direct impact on education. Chapter Three elaborates further on this issue.

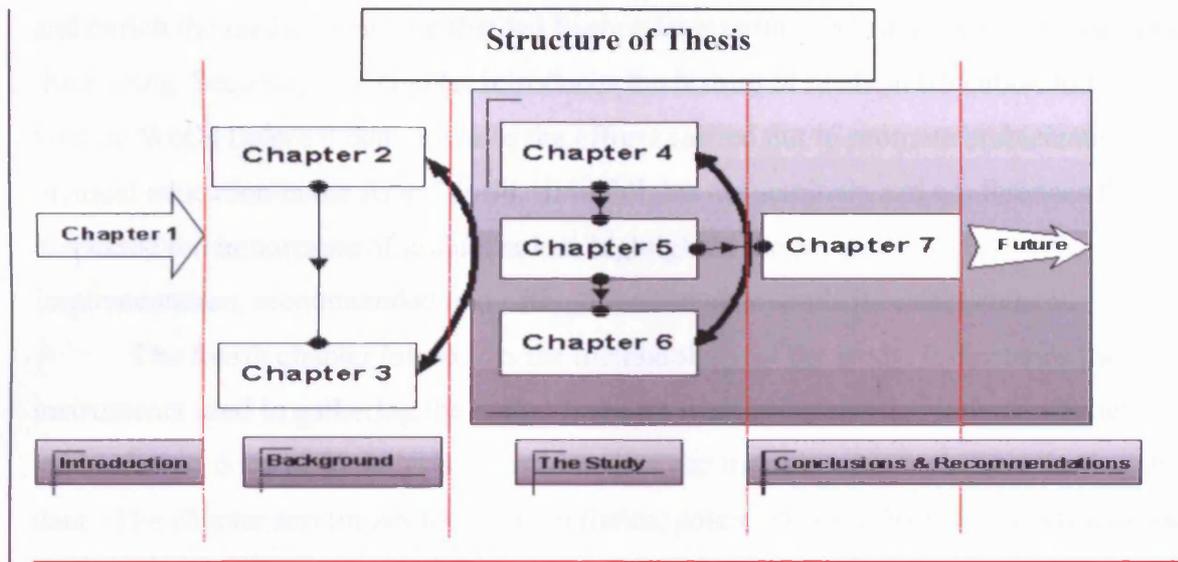
The setting of the study is three locations or universities, in three main cities: Khartoum, Omdruman and Wad Medani. Khartoum, the current capital and which was also the capital before independence, during the Condominium (1898-1956). Omdruman, next to Khartoum, was the capital of the country during the Mahdist Rule (1885-1895) while Wad Medani was the capital during the Turkish era (1821-1885). (see the map on p. iii) The choice of these universities has been based on the fact that they attract students from different parts of the country which gives the study the merit of having subjects from different parts of the country with different subcultures.

1.3 The Research Questions

As aforementioned, the study aims to describe the attitudes of the students and their faculty members on arabicization and its implementation. The questions the study attempts to shed light on are the following:

1. What are the language plans and language policies set to adopt Arabicization in higher education in the Sudan?
2. What are the advantages and disadvantages of using Arabic or English as a medium of instruction in teaching medicine in the medical colleges of the universities of Khartoum, El-Gezira (Wad Medani) and Omdurman Islamic University?
3. What are the perceptions that medical college students and faculty members at the universities of Khartoum, El Gezira (Wad Medani) and Omdurman Islamic University have about Arabicization and its implementation?
4. To what extent does the rejection of Western thoughts, practices, languages and 'unacceptable' political standpoint affect the language planning and decisions?

1.4 The Thesis Outline



To provide a background and basis for the study, the literature review in Chapter Two furnishes a theoretical overview of language planning and language policy. It presents definitions of language planning and language policy. It also highlights the language policy components, and some frameworks and approaches. The chapter introduces the role and the status of English and Arabic in Sudan with emphasis on language planning and language policy. It investigates the development and pertaining policies of the two competing languages in the Sudan: Arabic and English. This competition culminated in arabicization. Then, the chapter deals with medium of instruction policies and highlighted them to articulate its impact in shaping countries social and political systems. Also, Chapter Two probes into arabicization, the focus of this study and paves the way for understanding the context of the study through introducing and highlighting arabicization concepts, development and process.

The third chapter deals particularly with the history of education and highlights medical education in Sudan before introducing the Islamic heritage. It reports on traditional education that began with the formation of the country. Then, it succinctly describes the development of modern education in the Sudan in two phases: prior to independence and after independence. Then, the chapter presents medical education in Sudan and how it started and its current status. Also, the chapter describes the history of medicine practiced in the Arabic context and how the early Muslims and Arabs preserved Greek medicine and became scientific innovators with originality and productivity. The impressions emphasized in the chapter are meant to highlight that inherited medical knowledge especially from the Greek was acquired through

translation into Arabic and the thread of knowledge continued in Arabic to contribute and enrich the medical practice that led Europe later to the scientific revolution that still flourishing. Secondly, the chapter introduces the history of medical education in the Islamic World before it demonstrates the efforts carried out to promote arabicization of medical education in the Arab World. It highlights the seminars and conferences that discussed the importance of arabicization, highlighted the necessity of its implementation, recommended and offered assistance towards its establishment.

The fourth chapter introduces the methodology of the study. It discusses the instruments used in gathering the data. It shows what orientations, views and beliefs led to choose document analysis, questionnaires and interviews as tools in collecting the data. The chapter scrutinizes the characteristics, potentialities, construction, advantages and disadvantages of the techniques used in collecting the data with illustrative examples from the questionnaires. The chapter provides justifications for using several tools instead of one. It presents how the questionnaires and interviews were conducted. Then, it discusses the related ethical issues and shows how these gathering tools assisted in triangulation and judging the reliability of the attained results. Chapter Four also introduces also a brief description of the sites of the study, and describes the volunteers who participated in the students' questionnaire, the faculty questionnaire and the interviews. The chapter concludes with a discussion of how the data was analyzed.

Chapter Five provides the findings of the students' questionnaire and the faculty members' questionnaire and interviews. The results include, for example, the languages used in answering the students' questionnaire, the extent of use of languages of instruction in the medical colleges of Gezira, Khartoum and Omdurman and the perceptions of the students.

In Chapter Five, the data have been treated at two levels: macro and micro. At the macro level, the data have been displayed at the university level while at the micro level; three groups were formed for displaying and comparing data. First year and second year in a group called Group A, third and fourth in Group B and fifth and sixth in Group C. The findings of the instructors' questionnaire and interviews were used as comparative and confirming tool to findings of the students' questionnaire. They were not a reflection of the faculty members of these colleges due to the poor participation of the instructors.

Chapter Six delved into providing meanings for the findings in Chapter Five by offering extensive discussions on the advantages and disadvantages of using either

English or Arabic as a medium of instruction in medical studies and the perceptions of the students of these languages used as medium of instruction.

Finally, Chapter Seven furthers the discussion, presents conclusions, limitations of the study, and some recommendations. It concludes that students and faculty members have accepted the language change, arabicization, in principle. Students showed their awareness of the difficulties of implementation, the current variations of Arabic medical terms, and the lack of Arabic reference material. They also expressed their need for the English language to access medical knowledge which is mostly published in English and to prepare them for future studies outside the Sudan. The study concludes with a call for language planners to look into the successes of change in companies and organizations to benefit from management techniques and tools utilized in bringing about successful change

Chapter Two

Literature Review

The main purpose of this chapter is to base a theoretical foundation for language policies and medium of instruction. It begins by considering the general contours of language planning and policy as theoretically based concerns which are delineated thoroughly to form a base for understanding the development of policies regarding the two major languages in Sudan, Arabic and English. Following this, the chapter discusses the medium of instruction policies as an integrative part of language policies. Medium of instruction in higher education is highlighted to articulate its impact in shaping the country's social and political systems.

2.2 Language Planning and Language Policy

The literature concerned with 'language planning' shows that the sociolinguist Einar Haugen is often mentioned as the person who gave birth to the concept. He introduced the concept in his article 'Language planning in Modern Norway' and attempted to define it as "...an activity preparing a normative orthography, grammar, and dictionary for the guidance of writers and speakers in a non homogeneous speech community" (Haugen 1968 , 673). Rubin (1971) defined language planning as a body of ideas, laws and regulations and here I presume it refers to language policy. They furthered the definition to include changes in the rules, beliefs, and practices that are targeted to achieve/stop a planned change. They considered language planning to be future oriented and deliberate, although not always overt (Rubin, 1971). Later, another sociolinguist Robert Cooper proposed another definition of 'language planning'. He said, "language planning refers to deliberate efforts to influence the behavior of others with respect to the acquisition, structure, or functional allocation of their codes" (Cooper 1989, p. 45). This definition differed from former ones (See Rubin, 1971) and was contrary to the agreement among most scholars to limit the term language planning to the "organized pursuit of solution to language problems, typically at the national level" (Fishman, 1973, pp. 23-4). The definition does not consider language planning to be necessarily oriented towards problem-solving. Then, other definitions proliferated and encompassed different perspectives. Nonetheless, "The commonly-accepted definition of language planning is that it refers to all conscious efforts to affect the structure or

function of language varieties The commonly- accepted definition of language policy is that it is language planning by governments.... In this book [Tollefson's text], language planning-policy means the institutionalization of language as a basis for distinctions among social groups (classes)" (Tollefson, 1991, p. 16). Most scholars generally see power and politics as inherent in language policy and planning (Auerbach, 1995).

Politics is tightly connected to language policy changes in education. Education and language are seen as highly political because as Watson-Gegeo and Gegeo state, "they involve significant outcomes for people's lives and futures"(Watson-Gegeo and Gegeo, 1990, p. 59). They shape the outcomes of education and permeate the fabric of the community life.

A number of researchers see governments as the main makers of language policies. For example, Robinson defined language planning as "official, government-level activity concerning the selection and promotion of a unified administrative language or languages. It represents a coherent effort by individuals, groups, or organizations to influence language use or development" (Robinson, 1988, Online). In line with Robinson, James Crawford in his Internet homepage elaborated in defining language policy as "(1) what government does officially- through legislation, court decisions, executive action, or other means- to (a) determine how languages are used in public contexts, (b) cultivate language skills needed to meet national priorities, or (c) establish the rights of individuals or groups to learn, use, and maintain languages. (2) Government regulation of its own language use, including steps to facilitate clear communication, train and recruit personnel, guarantee due process, foster political participation, and provide access to public services, proceedings and documents" (Crawford, 2003, Online).

The ideal environment for language planning would be at the highest level of the government rather than the education sectors. However, in reality this would be true in case of a top-down perspective where governmental officials dictate the policy, otherwise, educators who have knowledge essential in formulating meaningful policy will be the makers. Robinson's, Crawford's definitions could be easily traced in the role of the government of Sudan in mandating arabicization in Higher education in Sudan, which will be detailed later.

Emenanjo in his paper in the World Congress on Language Policies, Barcelona, 16-20 April 2002 about 'Language Policies and Culture Identities', simply put:

"a language policy is a policy about human language, its status, its use and usage and its overall management in any polity. It is a policy about who uses or adopts what language, when, where, why and how, in any polity no matter its ethnic or racial make-up; its linguistic composition or ideological position, or its political evolution. Ideally, a language policy should be the end product of language planning informed by, among other things, linguistic data from socio-linguistic surveys or profiles."

Emenanjo (2002) concluded in his paper that language policies "are sensitive to their multilingual and multi-cultural complexions". Thus, I believe that there is a role of religion in the cultural assessment of different languages in many places. For example, in the Middle East and North Africa, Islam has religious traditions strongly identified with particular written traditions, literacy and education. They exert strong influences on language policy in these areas. Under Islam, there is a strong expectation that devout Muslims will learn Arabic, which strengthens cultural religious and symbolic ties among Muslims who have different native languages.

The field of language planning and language policy has witnessed significant development over the past years. Contributions from variety of disciplines, including education, linguistics, political science, law, policy studies, demography and sociology, have been adding value to the field and new insights in its processes, politics and the goals of language policies. Many interpretations and frameworks described how and why policies have certain effects in particular situations (see Leibowitz, 1969, 1971; Fishman, 1974; Kloss, 1977; Ruiz, 1984; Cooper, 1989; Tollefson, 1991; Phillipson, 1992). In the following paragraphs, I will shed light on three frameworks: Hornberger six-dimensional framework, rational model and the critical model.

Hornberger's framework identifies two language planning approaches- policy planning and cultivation planning- and three language planning types- status, acquisition, and corpus planning. Policy planning concerned with standard language attends to issues of the society and nation at the macroscopic level whereas cultivation planning deals with language or literacy at the microscopic level. Status planning is confined to uses of the language while acquisition planning concerns the users of language. Corpus planning attends matters of the language itself (see Ricento & Hornberger, 1996). This framework as Hornberger notes is neutral with regard to political direction. It is useful in analyzing language planning and policy activities in terms of a range of goals. However, governments intervene in areas involving language and they usually have primarily nonlinguistic agendas; furthermore, language change often has many causes, only one of which may be planning (Rubin, 1983).

The second framework is the rational model which sees multilingualism as a problem that governments have to solve. In its context, Rubin defined language planning as the pursuit of "solutions to language problems through decisions about alternative goals, means, and outcomes to solve these problems" (Rubin, 1971). This framework entitles the nation or the government as the sole agent for choosing from available alternatives based on their value and usefulness in achieving specific objectives. It has encountered criticism in the past 25 years and it has become clear that "the rational model in and of itself is inadequate to account for how policy is developed and why it succeeds or fails" (Ricento & Hornberger, 1996, p. 406).

In contrast, and largely in reaction to the positivist approach, the base for the rational model, and as a reflection of recent postmodernist trends, the critical model has emerged (ibid, p.406). This framework proposes theoretical and analytic approaches that assume a broader view of considering historical and economic forces influencing or determining social policy which includes language planning and policy. It emphasizes that all language policies are ideological even if the ideology may not be apparent or acknowledged (see Tollefson, 1991) Tollefson, one of the critical model proponents sees" the major goal of policy research is to examine the historical basis of policies and to make explicit the mechanisms by which policy decisions serve or undermine particular political and economic interests" (Tollefson, 1991, p.32). In addition to Tollefson, other scholars adopting an explicitly critical approach include Cummins (1988), Leibowitz (1969, 1971), Macías (1992), Pennycook (1989), Phillipson (1992), Ricento (1995), Skutnabb-Kangas (1988), Skutnabb-Kangas and Phillipson (1994), Sonntag (1995), and Street (1984).

The critical model or the historical-structural approach assumes that the sociopolitical and economic interests of the majority or the dominant are reflected in all language plans and policies and are often implicit and enmeshed in the reflected ideologies. It also supposes that "individuals are not free to choose the language(s) that they will be educated in..." (Ricento & Hornberger, 1996, p. 407).

Unfortunately, the above outlined theoretical and analytical approaches do not offer totally dependable model that can cover beyond the formation of a language policy and offer to predict the consequences of implementing a particular language policy or show a clear cause/effect relationship between certain policy types and the observed outcomes. However, they help in exploring the development of a language policy as in

our case arabicization policy. The critical model is chosen in this study since arabicization in Sudan is influenced by historical and political forces.

In an effort to situate more clearly arabicization in Sudan in relation to language planning and policy, the following paragraphs delve in shedding light on the language environment in Sudan.

2.3 Language Environment

The total ecology of the linguistic environment of the Sudan shows two major languages, Arabic and English, besides hundreds of local languages and dialects. In the following sections the accounts of languages in the Sudan will be covered.

2.3.1 Arabic

Arabic, the language of the Qu'ran, the book of Islam, and now one of the six United Nations official languages, came into the Sudan with the Arabs in the seventh century and spread by diffusion through the centuries to become the dominant language. This language, now spoken by about 200 million people around the world, has kept the Greek and Roman heritage of science and added to it as it will be illustrated in the following chapter. In contrast, English, an international lingua-franca, came into the Sudan with the British colony in the seventeenth century. It spread by teaching at schools and use in administration. It is the language of the elites in the north and the south of the Sudan.

Education during the Turkish rule of the Sudan was in Arabic and the teachers who taught in the schools were Egyptians, whose mother tongue is Arabic (Abdel Majid, 1949). During the Mahdist period (1885-1898), Arabic was used in education and as the language of the government and people. This was interrupted by the British colonial government which introduced modern education in the northern part of the Sudan. Teaching was conducted in Arabic in the primary and the intermediate stages while in secondary schools, all subjects other than religious and Arabic studies were taught in English. This continued even after independence until 1965 when the medium of instruction in secondary school was changed into Arabic. Traditional education in the khalwa and Masid (see the glossary p. ix) continued to prosper using Arabic.

The southern part of the Sudan took a different path. Arabic was not allowed in the first British government primary school, and English was introduced instead. Missionaries' schools confined their teaching to English language and Christian studies. However, Arabic has been the lingua franca for communication between the different

southern tribes which have more than 100 different local languages. Their use of Arabic has been attributed to the influence of both the soldiers (mostly of southern origin, but arabized Muslims) working in the British army and the northern Arab merchants who were operating in the region and spoke Arabic. An Arabic Sudanese Creole, a special form of Arabic named (Arabi Juba) is used in the region and it has become the language of the administration and a solution to the diversity of languages and dialects in the region. Missionaries were worried about Arabic and influence of Islam in the region. Their heads discussed the flourishing of Arabic in the southern region in their meeting in 1910, and wrote a letter warning the Condominium government about the spread of Arabic and thus Islam in the region (Al Sayyed, 1990). Eventually, movement of northerners and southerners between the two parts of the country was restricted in 1922 in what was known as the Southern Policy. Then, the missionaries opened more schools and held a linguistic conference in the South in Ar Rajaf in 1928 to discuss the great number of languages spoken in the region and how to write them. Representatives from the Sudan government, educationalists in Uganda, the Belgian Congo besides the missionary schools officials decided to use Latin rather than Arabic to write the diverse vernaculars of the region (Wagi'alla, 1996). The conference refused the use of Arabic on the basis that it would open the door for the spread of Islam and arabization of the south; besides, the adoption of northerners' attitudes which differed from the southerners (Tucker, 1934). If, by any means, Arabic became a necessity, it should be written in Latin (Sudan Government, 1928). Sanderson saw that using Latin in writing Arabic was wrong and stated that "the conflicts in education during 1930s would appear to have been about the 'wrong' things. Clearly, arabisation should have been allowed to have progressed naturally, and the Arabic language introduced in schools at an earlier date" (Sanderson, 1975a p.113). However, more was done to relegate the status of Arabic in the region through the eviction of Arabic speakers. First, Stack School where Arabic is used was transferred out of Wau, the capital of the province of Bahr El-Gazal and then, English and local vernaculars were introduced in missionaries' schools instead of Arabic (Beshir, 1983). However, it was not possible to get rid of Arabic in many parts of the south, for example Bahr El-Gazal. The failure was due to the presence of merchants from the north besides the contact of southern tribes with the Arabs in adjacent provinces. When Britain was in the process of preparing the country for independence, a change in the independence plan led to the improvement of the status of Arabic in southern Sudan. Britain initially was planning to annex the south to

Uganda, when it was decided to append it to the north instead, and that required integration of the southern educational system with the northern system. The Administrative Secretary (Assistant Governor of the Sudan) sent a letter reflecting a new policy concerning the South. He gave the opportunity to those who finished school in the south to join the Gordon College in Khartoum and mandated the teaching of Arabic in intermediate school (Sudan Government, 1945). Thus, Arabic had been introduced in all southern region schools above the village level after 1948 and the southern teachers were sent for Arabic training (Sanderson, 1975a p.112). In 1949, Juba Publication Bureau was established to expedite the production of textbook in Arabic (Sudan Government, 1946 in Sanderson, 1975a).

The Sudanese graduates of Gordon College formed the Graduates Congress that spearheaded the struggle for the independence of the country. They asked the government to open government schools in the south similar to the ones in the north and to use Arabic as a medium of instruction since the language was known to most of the tribes in the region. Another push to the use of Arabic in the south was granted by the Legislative Assembly that the government formed. It decided that Arabic be the language of education in both parts of the country (ibid). Consequently, the linguistic policy plan for the years 1951-1956 included Arabic as a main subject in all the schools of the region (Al Sayyed, 1990). This was enforced by a report of an invited international committee that included British, Egyptians, Indians and one Sudanese. They reported their findings in 1957, after three years of reviewing education in the Sudan. The report did not support the use of the local vernaculars in the missionary primary schools and recommended Arabic to be gradually introduced in the primary school. Moreover, it discouraged the use of English in the intermediate school and suggested using Arabic immediately on the grounds that it was the common language between the different tribes. Further, it suggested the use of Arabic instead of English in the secondary school to be after seven years (Ministry of Education, Sudan, 1957). Then, post independence, the Sudan joined the Arab League and declared Arabic as the official language of the country. The government has started to strengthen the status of Arabic in education through an arabicization policy. However, there has been resistance to this policy in the north and the south. Some northern Sudanese considered the policy as a detachment from the realm of modernization and a drawback while the southern Sudanese received it as a policy of arabizing and Islamizing the region which has a considerable number of Christians besides Muslims and a majority of local African

religions followers. Despite the use of Arabic as a lingua franca in the south, for the educated southern Sudanese, “many of who(*m*) had received education in English and adopted Christianity, Arabic was seen as equally alien, especially as it was seen as the language of Islam and Arab culture, a fact which was significant considering the conflict between the north and the south” (Ayak Acol de Dut, 2001, p. 15). The dispute of language in the south was resolved in Addis Ababa, in the 1972 agreement which was signed between the government and the rebels of the south. It stated Arabic as the official language of the country, granted local languages and dialects in addition to English a provision to be used in the south (see Allair, 1993: p.93, Ayak Acol de Dut, 2001 p.14). Nonetheless, “again the South has been plunged into a condition where education and language issues are suspended as any normal activity has been disrupted by war” (Ayak Acol de Dut, 2001, p.14). However, in 2003 and 2004, a peace treaty has been signed to solve the north-south conflict and a constitution has been drafted. Language has been of high concern in the peace negotiations and constitution discussions.

The constitution of 1998 has not bestowed English a definite role in the language policy of the country. Article 3 (Language) states that “Arabic is the official language in the Republic of the Sudan; and the State shall allow the development of other local and international languages” (Sudan Government, 1998). The constitution left the door open to accommodate the local languages in the country while it treated English as one of the international languages without regarding its historical role in the Sudan. Nonetheless, the draft of the constitution 2005 after signing the peace treaty between the government and Sudan People's Liberation Army (SPLA) reinstates English with an equal status to Arabic as a working official language and a language of higher education (Sudan Government, 2005). The first conference of Arabic Language was held in Khartoum in December.1983. It focused on Arabic in general education, higher education, religious education, artistic creativity & media and the future of Arabic and language policies in the Sudan (Miniminah, 2001). Also, a symposium on teaching Arabic in higher education was held in Khartoum University in 1990. It called for the review of curriculum, books and educational aids, in addition to the review of general education goals. It asked for new approaches for training and developing the teacher (Tamim, 1997). The discussion went deep into deciding the effective methodology to teach Arabic and highlighting the negligence of Arabic in scientific research. Two committees (one for curriculum, textbook and planning while the other for the teacher, administration and budget) presented recommendations that addressed

curriculum goals, general goals, specific goals, curriculum topics, directions about curriculum and methodology, the plan and finally the syllabus or the book (ibid).

In higher education, Arabic appeared first as a medium of instruction in the University of Cairo-Branch of Khartoum which was following the Egyptian educational system. The Islamic University of Omdurman joined University of Cairo in using Arabic as a medium of teaching. While other newly opened universities, for example, Al-Gezira University in Wad Medani and Juba University in Juba used English as a medium of instruction before the former became instrumental in the execution of arabicization policies. In other fields, the media has been transmitting in Arabic. The radio and TV broadcast mainly in Arabic. All newspapers and magazines are in Arabic except two which are in English. Even most of the imported weekly or monthly newspapers and magazines are in Arabic.

2.3.2 English

English was introduced by the British when they conquered many places in Africa. It has continued to be used as an official language or a lingua franca in many of the British colonized territories in Africa after they gained their independence in or after the 1960s. Even though, one article in the charter of the Organization of African Unity (OAU) has stipulated that the official use of former colonial languages “would be only provisionally tolerated” (Kalema, 1980 p.1 cited in Phillipson, 1992). In addition, OAU has formed an Inter-African Bureau of languages to “assist and encourage the use of indigenous African languages for educational, commercial and communication purposes on a national, regional and continental level” (ibid, p.27). Nonetheless, British varieties of language have developed in five countries: Sierra Leone, Ghana, Gambia, Nigeria, and Cameroon, each with a history of British rule. Kenya, Tanzania, Uganda, Malawi and Zambia gained independence from Britain in the 1960s and gave English an official status (Crystal, 1997). Other African countries followed, for example, Zimbabwe (1980). However, after independence, the status of English in Sudan started to decline especially when Arabic was considered as a sole official language in 1998.

As aforementioned, English was introduced upon the arrival of the British in the Sudan and used in administration and education. The British opened schools in the north that used to teach both English and Arabic besides other subjects. Their drive was to furnish their administration with Sudanese who were linguistically competent to perform lower administrative tasks. However, the standard of English achieved was

unsatisfactory and not up to the ambition of the Condominium Rule. In fact, in 1929, a commission found the level of English in schools low. Thus, the teaching hours for English were increased and passing it became a prerequisite for joining Gordon Memorial College. As a result of this policy, the standard of English rose as it was reported by the Department of Education in 1949.

In the south, education was almost entirely left to the missionaries who confined their teaching to English and Christianity. The missionaries' active drive was to eliminate Islam and the Arabic language which led to a conflict with the colonial government (Bakhiet, 1965). Sanderson attributed the ineffectiveness of the missionaries' education to reasons resulting from this conflict with the colonial government, the southerners' nature and their intolerance of outsiders in their territory (Sanderson, 1975a p.105). Missionaries asked for the use of English in administering the south. They stated "unless the language of administration was changed to English there was little point in extending the teaching of English in Catholic schools" (ibid p.108), and they threatened the government to withdraw their teachers from urban areas. Wingate, the governor, did not want the teachers withdrawn from schools, especially from Wau School. Thus, in 1908, the language of administration was formally changed to English (ibid p.108). Learning English was the vehicle for job seekers to get a respectable government job in the South. English classes were offered to the army, police and general government servicemen. In 1935, for example, there were 35 classes for teaching English outside the schools in the province of Bahr El-Gazal (Beshir, 1983).

After independence and by 1959, the administrative language of the government was Arabic after it had been the language of the lower levels of the administrative ladder for a long time. The use of English was reserved after independence by some private sector companies, for example Sudanese Tractors (Caterpillar), and companies indirectly controlled by the government, for example the electric company and Sudan Airways. These companies needed English to keep their affiliation with international companies. Nonetheless, gradually the status of English in them diminished. Added to that, the status of English as the official language had been changed and this impacted the standard of English in education. Besides, the great majority of the British teachers left the country. The contribution of the British Council, a supporter of many language programs and libraries, became negligible due to the change in the British funding policies and eventually that resulted in the lowering of the language standards.

Moreover, the great leap in the number of new schools and added streams in the year 1962-63 caused a drastic change in the number of students. Secondary schools for boys witnessed an increase of 50% and the girls 343% (Wagi'lla, 1996). This had a negative impact on the standards of all subjects and specifically the English language, due to the shortage in trained teachers to meet the sudden and unprecedented increase in the number of students that had gone beyond the country's limited resources. Needless to say, the decision of 1965 to replace English with Arabic in teaching in secondary schools compounded the deterioration of English standards. Four years later, the graduates of arabicized secondary schools joined universities and it was obvious that teaching them in English was a real difficulty. Remedial English was introduced in the first semesters by the newly established English units at the universities to shorten the great gap between students' English standards and the universities' requirements. For example, the University of Khartoum created an English Language Servicing Unit for this purpose. The downhill situation of English triggered the idea of arabicizing higher education and brought forward a recommendation made by a committee that had assessed the educational system in 1954. The committee had suggested that Arabic could be used at the level of the university (Ministry of Education, Sudan 1957).

Nonetheless, English has regained some status through the private international and language schools that have mushroomed to accommodate the need of the diplomatic community and those who have intentions to send their children to study abroad. Then, the boost came through the licensing of the National Salvation Revolution government of new colleges and universities and which has led to the emergence of colleges in which the medium of instruction is English. These colleges are meant to provide the graduates of the international and language schools a continuation and offer a cheaper alternative to studying abroad. However, the government changed its policy and "has now linked licensing of establishing new private institutions with their commitment to apply arabicization policy" (Sudan Embassy in South Africa, 2004, online).

The following paragraphs explain the differences between arabicization and arabization, when these concepts appeared in Sudan and what Arabicization High Commission, the instrumental agent entrusted to implement arabicization policy, is.

2.4 Arabicization

Arabicization and Arabization are not alternatives as some North African Arabs (in Morocco & Algeria) and some southern Sudanese have used them (see Redouane, 1998 & Ayak Acol de Dut, 2001). The former is an important national language question that is central to national unity and promotes the use of Arabic language while the later means the promotion of the Arab identity and nationalism. At the Arab States level, considerable official efforts were made in promoting arabicization through holding a number of conferences and seminars (see Chapter 3).

In Sudan, the idea of arabicization started earlier with the formation of the Graduates Congress in the thirties and emerged when the Legislative Committee called for the use of Arabic as the official language of the Sudan in 1948 (Gezira University, 2002). However, steady moves towards arabicization started after independence. For example, there was a suggestion to use Arabic in higher education as early as 1957. A Ministerial Committee recommended that Arabic gradually be used instead of English in conducting official and academic university business in 1970. By 1980, the number of Sudanese in the University of Khartoum staff became 90%, which facilitated the use of Arabic in administration (Wagi'alla, 1996). Consequently, arabicization was pushed forward during 1980s in the University of Khartoum and this coincided with the Arab Health Ministers Council's declaration that 1988, the year of starting arabicization in all medical and hygienic colleges in the Arab world. Another facilitator was the first Arabic conference that was held in Sudan during this period in 1983 to evaluate the status of Arabic in general, religious and higher education. Added to that, the Council of Arab Health Ministers held its twelfth meeting in Khartoum and requested Ministers of Health to inform the Council of their governments' decisions regarding arabicization. Then, it decided to organize a seminar on arabicization in coordination with the Regional Office for the East of Mediterranean in Damascus. The turning point in the timeline of the arabicization movement was the establishment of the Sudanese Arabicization High Commission. Since it is accorded high importance, the following paragraphs provide a detailed account of this committee.

2.4.1 Arabicization High Commission

A workshop held in Khartoum in 1990 at the University of Khartoum marked a practical step in the arabicization movement in the Sudan when it suggested forming an arabicization high commission. Discussions continued for four days. The discussions

highlighted arabicization as an identity, an educational necessity and a call for independence. They claimed that students could learn better in their mother tongue, Arabic, than in a foreign language. Moreover, it considered that arabicization will avail all sciences and knowledge in Arabic for students and citizens that may enable them to participate in the progress of the country. Arabicization will enhance coordination of academic relationships between researchers and students in all spheres of interest to citizens and the nation. The conference also claimed that arabicization will strengthen national identity, and emphasize national, sovereign and civilized detachment from following other nations (Sudan Government, 2001a) They supported their arguments and claims by providing that:

1. Arabicization of all syllabuses in the general education has graduated students with a wealth in both natural sciences and humanities. Thus, it is easier for them to continue their studies in Arabic at the universities and colleges.
2. Experiences of educational colleges at universities of Khartoum, Al-Gezira, Wadi Al-Nil, and the Girl's Science College at Omdurman Islamic University proved that arabicization was not difficult to attain and its difficulties were manageable. Besides, studies showed that the output of students who studied in Arabic had ameliorated compared to previous standards.

In the presentations and discussion of papers on arabicization of medicine, engineering, veterinary medicine and agriculture, the necessity of arabicization in forming the identity of the nation was emphasized and recommendations were spelled out in the following:-

1. Teaching scientific courses in Arabic for first year students of 1990-1991 in all higher education institutions, the theoretical and the practical. They should continue in Arabic until they graduate and thus Arabic syllabuses will be completed. It was hoped that all the concerned would do their parts in pushing the process and thus, the faculties were urged to teach some topics in Arabic for advanced classes where it was possible.
2. Procuring financial support for obtaining textbooks for first year immediately. To expedite buying them, the aforementioned educational colleges should be contacted for addresses and other pertaining logistics. An exhibit of Arabic scientific textbooks would be displayed in the National Council for Higher Education.

3. An Arabic scientific library should be established in all colleges and institutes and furnished by translated books and dictionaries from the Arab World.
4. The scientific material should be introduced in easier standard Arabic.
5. Regarding abbreviations and symbols, the agreed ones by international and scientific societies may be used until the national concerned bodies adopt a national one.
6. Due to the difficulties in handling some of the syllabuses tailored for some specialties, non-Arab visiting professors may use English in conducting their courses.
7. Establishing communication between Ministry of General Education and higher education institutions with regard of writing books for general education and whatever may lead to upgrading the syllabuses.
8. All universities should work on upgrading and enhancing their print facilities in order to print scientific textbooks.
9. Universities should consider writing and translating textbooks a criterion in evaluating teachers and giving them professorship titles.
10. Universities and higher education institutes should provide teachers by all means that facilitate and encourage them to write and translate.
11. Teachers who write or translate textbooks should be compensated according to the planned scheme of the Arabicization High Commission.
12. Setting up a high commission for arabicization under the Head of the National Council for Higher Education and three members of high scientific and administrative calibers with a council formed from:
 - A representative with high scientific experience from each university or institute.
 - The General Commissioner of Higher Education
 - A representative of the National Council for Research
 - A representative for each scientific and professional society.
 - An academician from the Arabic Language Academy in Sudan
 - Three highly specialized people chosen by the council in its first meeting

(Sudan Government, 2001a)

The commission was established in 1991 in pursuance of a political decree stipulating that Arabic language should be the medium of instruction and scientific curriculum at the Sudan higher education institutions and entrusted with putting

arabicization plans and policies into action and following up its execution. The following duties and guidelines were offered to the Commission to follow:-

1. Coordination with universities in holding seminars for scientific terms used in different specialties.
2. Holding exhibitions for Arabic scientific textbooks in coordination with publishers.
3. Establishing connections with similar bodies and language linguistics reference institutions in the Arab countries and elsewhere.
4. Framing criteria for scientific writing, translating and publishing. Besides, asking teachers and urging them to write and translate according to the stated plan.
5. Verifying the scientific material and the Arabic language used in the translated or written books before publishing.
6. Providing a central library including references, books, and dictionaries for different scientific spheres.
7. Bringing important fundamental references that serve arabicization.
8. Building a computer center and making programs of terminology for coordination, correcting and easiness of finding a scientific term (Sudan Government, 2001a).

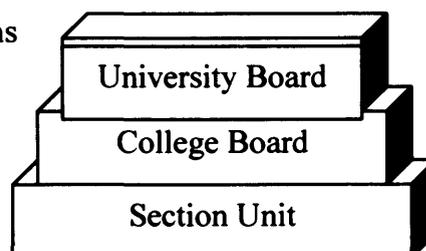
The Commission planned to organize itself in units to distribute the workload. The following units were suggested:

- a. Terms Unit
- b. Writing and Translations
- c. Training and Following-up
- d. Library and Documentation
- e. Teaching Workshops and Seminars
- f. Any other that may facilitate the process.

(Sudan Government, 2001b)

To facilitate the work of the Commission in arabicizing the language of instruction, it was required that universities form bodies according to this scheme:

Fig. 2 University Arabicization Teams



At the university level, each university was required to put up a board to implement arabicization policies. Every college, institute, school, scientific center in the university was represented on the board. The plan required the representative to be interested in arabicization and have accumulated a number of years of experience. The Vice-president should be a member of the board. At the college level, each college should have a board responsible for the execution of arabicization policies in the college. Members should be from all sections of the college and chaired by the dean of the college. Besides, every section should have a unit chaired by the head of the section. It should provide Arabic references through writing, translating or buying. As a matter of fact, the section resembles the base for arabicizing in any university (ibid).

One of the significant achievements of the Arabicization High Commission was organizing the Seventh Arabicization Conference in Khartoum, Sudan in 1994 in coordination with the Arab Organization for Education, Culture and Sciences. First, the Conference formed committees to report on the dictionaries projects, what have been accomplished of Oman Seminar's recommendations on the methodology of developing Arabic scientific terms. Next, a committee was formed to finalize the final report and recommendations. After that, the conference consented to previous decisions formulated in the past six conferences regarding Arabic language and arabicization. It emphasized the use of Arabic language in all scientific, educational, media and other spheres. In the recommendations, the conference required the Arab nation to move forward in arabicization and have the governments mandate it for all education stages. Besides, the media had to use standard Arabic in newspapers, radio and television. It highlighted the importance of coordination between arabicization institutions to avoid duplications and contradictions. It urged the Arabicization Coordination Office to complete its projects and mainly the building of lexicons in coordination with Arabic languages academies, interested groups and individuals in arabicization. It asked for supporting non-Arab Islamic countries in writing their national languages in the Arabic alphabet. It required the Arab Organization for Education, Culture and Sciences to establish a national institute to transfer sciences and technology into Arabic. It called for building a language wealth that constitutes the base for a life language.

Finally, the following six specific recommendations culminated the work of the conference:

1. The conference consented to the project of the four dictionaries that the committee had studied.
2. It urged the Arabicization Coordination Office to edit immediately these dictionaries before it could be printed and distributed.
3. It required that the recommendations of Rabat seminar (1981) and Oman seminar (1993) be carried out.
4. It encouraged universities, Arab specialized institutes and teachers to use unified Arabic terms produced by the Arabicization Coordination Office in their researches, studies and lectures.
5. The necessity of teaching the scientific nomenclature in colleges and institutes in order to develop Arabic terms on scientific basis.
6. The conference agreed to adopt the Arabic scientific nomenclature that was consented to by the seminar of the Arabic language academies in Oman in 1987, and asked the Arabicization Coordination Office to publish and distribute it to all universities, research centers and arabicization centers in Arab States.

(Miniminah, 2001, Online)

The major achievements of the Arabicization High Commission are the releasing of the following unified dictionaries:

1. Physics unified dictionary.
2. Chemistry unified dictionary.
3. Engineering unified dictionary.
4. Mathematics unified dictionary.
5. Unified medical dictionary as a basic source for medical sciences, including medicine, veterinary, pharmacy, dentistry and nursing.

There are others in press:

1. Computer unified dictionary.
2. Geology unified dictionary.
3. Archaeology and history unified dictionary.
4. Agricultural unified dictionary (under preparation at the faculty of agriculture, University of Khartoum

(Sudan Embassy in South Africa, 2004, Online)

2.4.2 More Efforts

Another practical step in the arabicization movement was the organized visits that the deans and staff from Arab medical colleges made to the medical colleges that teach in Arabic, specifically the ones in Syria. In 1992, fourteen Sudanese teachers visited Syria, followed by a group of twelve in 1993. In an interview with one of these visitors, he admitted that the visit had given him confidence that arabicization could be carried out easily with some good planning (see Appendix B, Dr. Sahal's Interview. pp. 209-214).

Another push for arabicization is the evaluation of the arabicizing experience of the University of Gezira from 1991 until 2002 in the conference that was held in the university on the 28th of August, 2002. It was reported that University of Gezira had formed a board for arabicization headed by a professor and the membership of the deans of colleges. Then, each section was required to have a committee to implement arabicization as mentioned earlier. Sections worked on recommending suitable Arabic books, following the process of using Arabic in teaching and assisting in the initiatives of faculty members in publishing scientific arabicized papers or books written in Arabic. At the colleges level, workshops were conducted e.g. the first workshop for arabicizing the syllabuses of second and third year of the Medical College in 1991 and the first workshop of arabicizing the syllabuses of the Science and Technology College in 1992 (Gezira, 2002).

“The arabicization process has now covered all the state run higher education institutions except few faculties of applied sciences in only two universities where work is underway to complete arabicization in the near future” (Sudan Embassy in South Africa, 2004, online).

Notwithstanding, very few private institutions that teach their courses in foreign languages remain, but the government has now linked licensing of establishing new private institutions with their commitment to apply arabicization policy (ibid).

To conclude this section, it is of paramount important to state that Arabic has been central in education in Sudan. Arabicization process is underway through the efforts of Arabicization High Commission and it has been guided and influenced by the history and cultural heritage of the country. The history of education in Sudan and the history of medicine in the Islamic world offer us clues to understand the arabicization process as a language change. Thus, the following chapter introduces a historical

background with the intention of finding the roots for the arabicization policy prevailing in Sudan.

2.5 Medium of Instruction in Higher Education

This section focuses on medium of instruction with an emphasis on higher education to provide a descriptive conceptual framework in order to understand arabicization in this study since it is a medium of instruction policy taking place within the overall paradigm of Sudanese social transformation. Medium of instruction issues are crucial in a number of African countries where colonial, social, and a history of racism have created a linguistic present of great complexity. The choice of languages as media of instruction in Africa has been based on a number of factors. The main ones were the historical experience of colonialism, post independence political evolution, the socio-linguistic contour of each polity and the strength of linguistic and educational lobbies in each country (Obanya, 1992). Besides, the language question in the continent has been fraught with tension and conflict. Debates centered on the usefulness of European languages as international mediators and inter-ethnic communication have often led to the perpetuation of official status of the colonial languages as the case of Kenya, Tanzania, Uganda, Malawi and Zambia (Crystal, 1997). In fact, few Africans use the standard varieties of the foreign languages in their daily interactions. In several instances, the language policy is diametrically opposed to reality, languages are mandated that are barely spoken in the country. Evidence suggests that language policy is driven by political rather than linguistics forces (Kaplan & Baldauf, 2003). The patterns of education in Africa during colonization followed the type of occupier. France mandated French for all levels and prohibited the use of any indigenous language in their dependants. Spain and Portugal followed a similar practice. Britain and Germany seriously promoted their languages; however, they gave prominence to indigenous languages in the early years of schooling.

To add to the picture about African countries, the following typology of sub-Saharan Africa is covered following the working document of UNESCO for the Intergovernmental Conference on Language Policies in Africa, Harare 1997:

- “(a) More or less monolingual countries where the language in question is spoken:
 1. as the mother tongue:

Somalia (Somali), Lesotho (Sesotho), Swaziland (Siswati), Burundi (Kirundi), Rwanda (Kinyarwanda) and presumably Botswana (Setswana). For Madagascar, where virtually the entire population speaks Malagasy. This may be because the country is not considered as belonging to sub-Saharan Africa or that Malagasy is not counted as being an African language (in fact, it belongs to the Austronesian family).

2. as a lingua franca:

Kenya, Tanzania (Kiswahili), Republique Centrafricaine (Sango), Mali (Bambara), Senegal (Wolof), Sudan (Arabic), Ethiopia (Amharic/ Amarinya).

It would also be interesting to know to what extent these languages are also spoken as mother tongues.

(b) Countries with one dominant language:

Ghana (Akan-Twi), Burkina Faso (Mossi/Moor!e), Niger (Hausa), Zimbabwe (Chishona), Togo (Ewe), Benin (Fon-Gbe), Malawi (ChichewaXhinyanja).

(c) Countries with several important languages in competition:

Nigeria (Hausa, Yoruba, Igbo), Sierra Leone (Temne, Mende), Congo-Kinshasa (Kikongo, Lingala, Chiluba, Kiswahili/Kingwana)

(d) Countries without a dominant language:

Cameroon (although Bulu is important in the south and Fulani in the north), Cbte d'Ivoire, Mozambique" (UNESCO, 1999)

The existing pattern of language in education in Africa shows the following characteristics:

- a) Most of former British dependants use mother tongue as a medium of instruction in primary education; nonetheless, it teaches English as a subject afterwards and at all levels of education. For example, Tanzania, Madagascar, Burundi, Rwanda, Somalia (Italian is used), Ethiopia (Italian is taught in post-basic level).

- b) French former colonized countries do not use mother tongue as a medium of instruction but teach it as a subject.
- c) Almost all African countries use the colonial language English, French, Spanish and Portuguese as a medium of instruction at the post-basic level.
- d) African countries influenced by Islam teach Arabic in different forms at different levels of education.

(ibid)

UNESCO's experts reported very poor student performance all over Africa (Alidou, 2004). UNESCO assessment indicated in a study that students are still struggling with language of instruction in both former French and English colonized countries (UNESCO, 2000, cited in Tollefson & Tsui, 2004). Experience from Africa has produced evidence that teaching children in their mother tongue can be more effective than teaching them in a foreign language. Ngugi wa Thiong'o commented on studying in a foreign language "the language of an African child's formal education was foreign. The language of the books he read was foreign. Thought in him took the visible form of a foreign language" (Ngugi, 1986, cited in Tollefson & Tsui, 2004,p.199). Teachers and university academics in Hong Kong had a similar belief against the use of English as a medium of instruction "on the ground that it had detrimental effect on the students' cognitive development" (Cheng,Shek, Tse, & Wong,1973, cited in Tollefson & Tsui, p. 105). Added to that, the separation that exists between languages of prestige and practice is growing as education systems deteriorate and informal sector activities become the economic resort of urban Africans. For example, in Sudan government employees, that is, the elite used to be the model for the youth during the colonial era and shortly after independence. Individuals would work hard to join this group, the speakers of the foreign language, who were holding prestigious jobs. However, this has changed in the social transformation that is taking place in Sudan where English has lost its role in the social advancement of its speakers. Speakers of English used to find prestigious jobs easily during the British rule of the Sudan and the early times of independence. Then, the administration of the country used Arabic as a medium which made English not needed as a requirement to join the government workforce. Added to that, the semi-government companies (owned by the government but independently run) and private sector companies who retained the use of English for some time before they joined the government in using Arabic. Notwithstanding, English is considered a 'global language' and currently holds a uniquely influential position in the world.

According to Crystal English is used as an official language in about 85% of the international organizations in the world. One third of the newspapers are published in countries where English is assigned a special status. English has an eminent role in film industry, and radio; besides, it the language of international air traffic control. At least three-quarters of international academic journals are published in English. Estimation shows one billion people are studying English around the globe (Crystal, 1997). Added to that, "The dominance of English in academic discourse is important facet of the construction of professional discourse, as well as with respect to issues of power and control in both English-dominant and other societies around the world (see Faiclough, 1989; Gunnarsson *et al*, 1997; Hasan & Williams, 1996; Watts &Trudgill, 2002; Lin & Martin, 2005). In globalization, a more commonly voiced view nowadays is that English is a means of fostering mutual international understanding. It is the language of TV, the Internet and international graduate and post-graduate studies. It is a compulsory linguistic competence for any individual from a non-English speaking country seeking to join international studies.

The dominance of English is indisputable; nonetheless, a considerable disagreement as to whether the unique status of English in the world today is a positive thing. Some writers such as Pennycook (1994) see the status of English in the world as hardly a linguistic one. They considered it leading to linguistic imperialism and linguistic inequality (see Penycook, 1994, 1998; Phillipson, 1992; Tollefson, 1991, 1995). The popular fallacy that English has intrinsic qualities of resources or expressions which stand above other languages is still surprisingly prevailing. For example, Schmied (1991) described English in Africa and reported that this belief of idealizing English is found in many African countries. "such positive views of English inevitably lead to negative views of other, and especially indigenous , languages" (Reagan & Schreffier, 2005).

In such environment, especially in Africa, those notions about English pose challenges for the wish of the people to use indigenous languages as media of instruction. In fact, every nation wishes to preserve a prestigious status for its national tongue and maintain it as a medium of communication. However, a number of issues impact the implementation of this wish. Political pressure exemplified in the phenomenon of globalization and thus the increasing hegemony of English forced a number of states to revisit their language planning policies in higher education. For example, France and Japan "have recently had to adopt more realistic measure to both

ensure that their undergraduates are competent in English, and to attract international students to their tertiary level programs, by using English as the medium of instruction in some subjects and institutions." (Kaur Gill, 2004, p. 148) Another example is China where instructions were issued to universities and colleges to use English in some chosen professional subjects (ibid). Also, Indonesia is offering a medical degree fully taught in English to attract international students (ibid). Thailand which has not experienced English-speaking colonial rule is using its national language as a medium of instruction; nonetheless, English is used in technical readings, some lectures and writings (Smalley, 1994 cited in Reagan & Schreffler, 2005) Another example is Turkey, where Turkish language has been accorded a major role in promoting education, relaxed its control over mother-tongue medium of instruction in favor of English due to the emergence of a number of English –medium private universities (Reagan & Schreffler, 2005). This binary system where a national language is used in government higher education institutes while English is used in the private institutions appeared also in some other countries. For example, Malaysia in her endeavor to be "as a regional education hub" allowed the private sector and foreign universities to use English in their institutes in place of Bahasa Malaysia, the national language that took 26 years to be the medium of instruction throughout all levels of the Malaysian education (Kaur Gill, 2004). Sudan, at the beginning of the revolution in higher education, gave licenses to private higher education that commenced using English as a medium of instruction. Then, licensing was geared to adherence of using Arabic as a medium of instruction.

Medium of instruction policies are neither historically or socially neutral; besides, they are not simply about "the educational efficiency of one code over another" (Pennycook, 2001, p.195). They are ideological constructs and as language policies, they reflect and produce distribution of power (see McCarty in Tollefson & Tsui, 2004). History has its effect on the formation and direction of a language policy. As aforementioned that past colonial experiences trapped many African states and others around the globe within colonial language policies. Hegemony of foreign languages, especially English complicated the situation. For example, Arab States, while recalling with pride their heritage and dominance in the medieval scientific sphere, are now struggling to prevent Arabic language from an inundation of modern foreign terminology. According to El Khafafi, "The Arabic language-planning agencies,

whose efforts to date, despite their excellent intentions, have not exhibited stellar success,” (El Khafaifi, 2002)

Relegation of status of colonial languages has been stipulated by the Organization of African Unity (now named African Union) in its charter as has been detailed in section 2.3.2 in this chapter. However, as aforementioned the pattern of media of instruction in Africa is totally different from what OAU has envisioned and given provision for. Choice of a language for a medium of instruction is governed by a number of issues such as social, political and economical ones. An example of political forces can be seen in the resolution of southern Sudan conflict that ended in signing a peace treaty and a new constitution. In the draft of constitution 2005 in Sudan, article 8 which is about languages states:

1. All indigenous languages of the Sudan are national languages and shall be respected, developed and promoted;
2. Arabic language is the widely spoken national language in the Sudan;
3. Arabic, as a major language at the national level, and English shall be the official working languages of the national government and the languages of instruction for higher education;
4. In addition to Arabic and English, the legislature of any sub-national level of government may adopt any other national language(s) as additional official working language(s) at its level;
5. There shall be no discrimination against the use of either Arabic or English at any level of government or stage of education;

(Sudan Government, 2005)

A comparison of language status in the 1998 constitution and the 2005 constitution shows that indigenous languages have been acknowledged. Arabic was the only official language in the 1998 constitution while the 2005 bestowed English the same status with an emphasis that Arabic is the major since it is the widely spoken language in the country. I join Tollefson and Tsui (2004) in their questions and add some others:

"What combination of instruction in students' native language(s) and in a second language of wider communication will ensure that students gain both effective subject content education as well as the second-language skills necessary for higher education and employment?"

"Which ethnic and linguistic groups will benefit from the alternative medium-of-instruction policies? What language policy best fulfils the need for interethnic communication? What policy best maintains a balance between the interests of different ethnic and linguistic groups and thereby ensures an acceptable level of political stability?" (Tollefson & Tsui, 2004, p. vii)

Will the majority of the population be disadvantaged by reinstating English in as a medium-of-instruction in higher education?

Will Sudan experience what Hong Kong has gone through: one country, two systems: arabicization in higher education in the northern universities and English in the southern region universities?

Thus, in light of these questions, the thrust of the following chapters explore the language situation in higher education in Sudan. To pave the road for an understanding of the prevailing language policy, the following chapter, Chapter Three, intends to highlight the source for arabicization policy. It offers an account of the history of education in Sudan and the history of medicine in the Islamic world as clues for grasping the roots of arabicization policy which is a major language change.

Chapter Three

HISTORICAL REVIEW: History of Education in Sudan and the History of Medicine in the Islamic Era

There is a role for history in Language planning. History is a resource for planners in tailoring policies. Digging into the history of a language in a location assists in understanding the roots of the problems or causes that led to adopting a certain language policy. “The roots of many language planning problems lie in the role and historical development of language usage in a particular polity or location[A]n understanding of the historical circumstances can give planners and decision makers a better understanding of why a particular language problems exists; the past, present and future trends in relation to a language issue” (Aksornkook, 1985 cited in Serafin Coronel- Molina, Online).

Thus, this chapter is about history and it includes two sections. The first section discusses the history of the development of education in Sudan with emphasis on educational policies and medical studies. The second section highlights the medical heritage of the culture that Sudan belongs to, the history of medicine and medical studies in the Islamic world. Both sections aim to provide a historical background and assist in understanding the context of the study.

3.2 Development of Education in Sudan

The development of education in Sudan is tracked from the time before the formation of the country, through the colonial phases mentioned in the introduction, to the time after independence. This section commence with a timeline that assists in articulating historical phases of the Sudan. Then, it highlights traditional education which has started in the old kingdoms and sultanates before the country came to be known as Sudan. Then, it highlights modern education which appeared with the arrival of the Turks in the Sudan, continued later when the British occupied the country on behalf of Egypt and then illustrates how modern education evolved after independence. Finally, the section concludes with a briefing on medical education in Sudan.

3.2.1 Sudan Historical Timeline

Table 1. Sudan Historical Timeline

Date	Era	Details
2700-663 B.C.	Cush	Northern Sudan ruled by Egyptians and in turn the Cushite Kings ruled Egypt about 750 B.C. to 663 B.C.
590 B.C-350 A.D.	Meroitic Kingdom	Cush moved to Meroe and continued to develop independently of Egypt for centuries.
540-1276 A.D.	Christian Nubia	Nubian Kingdoms maintained political independence and commitment to Christianity for centuries.
1504-1761	Funj Sultanate	From Sinnar, ruled Al Jazirah, tribal districts north to the third cataract and south to the rainforests.
1596-	Fur sultanate	From Al-Fashir, ruled Darfur.
1821-85	The Turkiyah	The Mamluk ruled Egypt and Sudan as dependencies of the Ottoman Empire,
1884-94	The Mahdiah	The first genuine Sudanese nationalist government that chased the Turks out of the country.
1899-1955	The Anglo-Egyptian Condominium	Britain restored Egyptian rule of the Sudan and governed on the behalf of the khedive of Egypt.
Jan. 1954-56	N U P Government	National Unionist Party lead by Ismail al Azhari formed the transition government for independence.
January 1,1956	Independence of the Sudan	On December 19, 1955, Sudanese parliament unanimously adopted a declaration of independence
Feb.1956- 58	Umma-PDP Coalition Government	Umma Party and People's Democratic party brought down NUP Government
Nov. 1958-64	The Abbud Military Government	Abbud removed the civilian rule in a coup.
Oct. 1964-65	October Government	Sirr al Khatim al Khalifa was selected as prime minister of October Revolution government.
1965-66	Mahjub Government	Mahjub,Umma leader, and Azhri, UNP leader formed the government.
1966-67	Sadiq al Mahdi Government	Sadiq led a faction of Umma Party and formed the government with a backing from NUP.
1967-69	Mahjub Government	Mahjub was the prime minister of coalition government of Umma, NUP and PDP.
1969-85	May Regime	Colonel Jaafar an Nimeiri seized power in coup
1985-86	Dhahab Government	Lieutenant General Abd ar Rahman Siwar Dhahab overthrew Nimeiri, formed a 15-man Transitional Military Council which rule the country.
June 1986-89	Sadiq al Mahdi Government	Sadiq formed a coalition government with the Umma Party, Democratic Unionist Party, National Islamic Front and 4southern parties.
June 30,1989- Sept. 2005	National Salvation Government	Colonel Umer Hassan Ahmed al Bashir overthrew Sadiq and established a government ruling the Sudan up to now.
Sept.2005-	National Unity Government	Based on the Pease Treaty, a federal government in Khartoum and a government in the southern part of the country

3.2.2 Traditional Education

Traditional education began in the old kingdoms and sultanates that later formed what is called now the Sudan. Modern education was introduced by the Turks when they ruled Egypt and Sudan. However, higher education has a fairly recent history that started before independence (1956) during the Condominium rule, the rule of the British and Egyptians. Before that era, traditional education was the norm.

Traditional education started in the early Middle Ages of the Christian Nubians (Fadl in Brown & Hiskett, 1975). The church taught priests and clerks to write in Greek, Coptic and the local language. These educational activities decreased with the decline of Christianity and disintegration caused by the Mamluk forces and the infiltration of nomadic Arabs (ibid). Muslim holy men or 'fakis' took over teaching and religious functions when the priests disappeared. Their teaching was exclusively religious in character and was based on two institutions: the khalwa and the masid. The khalwa (the Quranic School) "literally means the place of seclusion" (El Gizouli, 1999, p.1). Originally, a Sufi, a Muslim mystic, used it as a place for worship and mediation, but it evolved as a school for teaching the Qu'ran. The masid (a corruption of the word masjid or mosque) was the higher form for more advanced studies of Islam (Wad dayfallah, 1971).

These educational institutions flourished during the early period of the Funj Kingdom and the Fur Sultanate (ibid). They tended to be associated mainly with religious learning. Nevertheless, children were taught to write the Arabic alphabet under the care of an advanced pupil in the khalwa. Arabic has been the language of instruction in the khalwa since it started. The faki dictates to his pupils who copy the verses on a wooden slate. Pupils used to join the khalwa at the age of seven or eight and pursue their learning for periods that varied from one to another based on ones ability and aptitude. Some continued their studies in the masid and maybe further in Hijaz or Egypt. "Important masids were probably miniature of Al-Azhar University in content and quality" (Fadl cited in Brown & Hiskett, 1975, p.119) Instruction in the masids was graded and individualized. Students could choose their tutors and progress as they wished. The methodology used in these institutions, as described by Yusuf

Fadl, is “the method of mechanical memorization introduced the students to a style of learning prevalent in higher institutes” (ibid, p. 119).

3.2.2 Modern Education Prior to Independence

In 1821, the Sudan came under the immediate control of the Ottoman Province of Egypt and its Viceroy Mohammed Ali Pasha. The Turk-Egyptian administration’s initiative of turning Egypt into a modern independent state led to adoption of the western civilization model. The impact of the process was echoed in the Sudan. The first step was opening the first school in 1850. However, it was closed in its second year. Sixteen years after the closure of the first school, a second school came into existence. Then, four other schools were established in the provincial capitals. The graduates of these schools worked for the government as clerks or as telegraph and dockyard trainees. The khedives, the Turk rulers of Egypt, made attempts to promote education in the Sudan encouraged by the need of the government for servicemen. Simultaneously, Christian missionaries participated in the realm of education and set up a school for Sudanese, Coptic, and European children to study Arabic, French, Italian, arithmetic and handicraft. More missionary schools joined in the period of 1857-1875. However, in 1885, the Sudanese with the leadership of al-Mahdi, a Sudanese religious leader, revolted against the Turks, killed Gordon Basha, the viceroy of the khedive in the Sudan and ruled the country. The Mahdists closed modern schools. However, they employed their graduates as servicemen in their administration. Traditional education was equally crippled by the turbulences of the time (Fadl cited in Brown & Hiskett, 1975). The British invaded the Sudan in order to regain the Egyptian former rule of the country and as a revenge for the murder of Gordon. They ended the independence of the Sudan in 1898.

Secular and missionary education embraced by issues of power and politics permeated the fabric of the Sudanese society after the defeat of the Mahdist, the religious regime, and the establishment of the Condominium Administration of Egypt and Great Britain (1898-1956). Sudan became one of the British dependencies that followed its colonized countries’ educational policy which could be traced in various reports that covered different periods. For example, the Secretary of State for the Colonies presented in March 1925, a memorandum that contained the most comprehensive statement of objectives, which had been prepared by the Advisory Committee on Native Education in the British Tropical African Dependencies. The

objectives included that education should be adapted to local conditions, an important role should be assigned to religious training and moral instruction, local vernaculars should be taught, technical and vocational training should be provided, provision should be made for girls' education and a government system of inspection. There was little in principle to criticize in those objectives as they were set out. Nonetheless, there was a wide gulf between what was planned and what was actually practiced and achieved. For example, regarding the role of religion, the British Administration looked at the traditional education with fear that it could lead to religious zeal and fanaticism. In fact, from the first years, this fear had surfaced. Lord Cromer in his letter to Sir E. Gorston on November 12, 1908 described traditional education as the one that depends on the study of the Qu'ran that may lead to religious zeal and fanaticism. He thought that religious education should be confined to basic Islamic teachings and there was no need to expand on that since it poses unneeded danger (Cromer in Beshir, 1983). Consequently, he called for the inclusion of instruction in very elementary secular subjects such as arithmetic (Beshir, 1983).

It is quite surprising that there were not any government schools at all for girls in the early decades of the Condominium. The statistics for 1956 show 22.9 males in every thousand of the population, but only four females, could read and write (Ministry of Education, 1960). The Anglo-Egyptian government policy in the Sudan was to enable the 'masses' to understand the machinery of the government (Currie, 1934). It was also targeted to provide craftsmen and minor government officials for administrative needs and girls were not counted in that process. Sanderson has a different reasoning; she thinks that male British officials saw no urgency for the development of post-elementary schools for girls (Sanderson in Brown & Hiskett, 1975b). As a matter of fact, the Condominium government had a low priority accorded to educational expansion and tended to see that in terms of consumption rather than investment. This was exactly as Pennycook (1994) reported on colonial India where educational provision had been on a small scale and generally haphazard.

The establishment of government schools was met by suspicion. People saw the new elementary school as a replacement to the khalwa, the symbol of religious education. Fakies, the khalwa's teacher, feared losing their status and source of income. Peasants considered their sons joining schools would rob them of helpers at their work and control over their behavior. They believed that city life would spoil their sons; besides, school rosters could be used in registering their sons in the army or police

forces (Ministry of Education, 1962). Add to these, the scarcity of government funds for education. Less than 1% of government expenditure was allotted for education till 1903 and it reached its maximum (4%) in 1912 (Beshir, 1983). Insufficiency in trained teachers was another factor that caused a delay in the development of education during the Condominium. In general, education development proceeded very slowly until the First World War due to the economical recession of 1908, the withdrawal of Egyptian Government's assistance in 1913, the commercial slump of 1913, and the cancellation of educational taxes and the war (ibid).

Parallel to the government schools there were two major distinct educational systems; the Islamic religious education symbolized in the khalwa and masid, and the Christian religious schools run by missionaries. Each of the two geographical parts of the Sudan, the Northern provinces and the Southern ones had one or both of them. In the southern part, education was left entirely to the missionaries and tribal education where the individual learnt to abide to his tribe traditions. There were no government schools in the South due to the British unwillingness to open primary schools in the region since all the books available were in Arabic and had many references to Islam and thus inclusion of Arabic was considered counterproductive (Wagi'alla, 1996). In the northern part of the Sudan, education included government schools, Islamic religious institutes, a few missionary schools and other schools administered by Egyptians that followed the Egyptian system of education.

The prevailing pattern of higher education in the Sudan started when Lord Kitchener called for a memorial college to commemorate General Gordon. On November 30, 1898, the British public received his appeal for funds. In his letter, he urged the British public that "... if Khartoum could be made forthwith the center of an education supported by British funds and organized from Britain, there would be secured to this country indisputably the first place in Africa as a civilized power, and an effect would be created which would be felt for good throughout the central regions of that continent" (Letter in El Gizouli, 1999 p.229). Then, Lord Kitchener spelled out his proposal,

"I accordingly propose that at Khartoum there should be founded and maintained with British money a college bearing the name of Gordon Memorial College..." He went further and stated the policy for the college "We should begin by teaching the sons of leading men, the heads of villages, and the heads of districts... The teaching, in early stages, would be devoted to purely elementary subjects, such as reading, writing, geography, and the English Language. Later, and after the preliminary stages have been passed, a more advanced course would

be instituted, including training in technical subjects, especially adopted to the requirements of those who inhabit the valley of the Upper Nile.” (ibid, p.229-230)

Lord Kitchener emphasized that there would be no interference with the religion of the people, named the staff to be British and the Governor-General of the Sudan to supervise the arrangements. In his appeal, he asked for one hundred thousand British pounds. Of this sum, ten thousand pounds would be used in the initial outlay and the ninety thousand pounds would be invested for the sake of supporting the college and its staff. (ibid)

On December first, 1898, the General Council was formed after an explanation offered by Lord Kitchener, and on January 18, 1898, the General Council elected the Executive Committee to bring Lord Kitchener’s proposal, after some necessary modifications, into effect. The Parliament empowered in an act the Executive Committee to invest the Trust, as they deemed appropriate. Lord Kitchener formally opened the college while the buildings were still in progress. In his inaugural speech, he said he expected the college to offer secondary and more advanced scientific education to train Sudanese to fill the posts required by the government. This policy of providing servicemen to work for the government continued to drive educational development even after independence. (ibid)

In 1900, the Condominium Government brought Mr. James Curie from the Egyptian Ministry of Public Instruction to the Sudan and appointed him as first Director of Education and first Principal of the college. He worked on starting an educational system. Two Higher Primary schools and an industrial one were set up to be the nucleus of the new college. Then, it was decided in 1905 to extend the scope of the Gordon College curriculum to include an ordinary Secondary school in which general education was to be provided (El Gizouli, 1999). In the same year, a school of engineering was added (ibid). In 1914, the Upper School included the Training College for Teachers and Judges, the Engineering Section and the Literary Section. Starting in 1920 and under the direction of the new Director of Education, Mr. J. Crowfoot, Gordon College continued to grow steadily. However, in 1924, two important events happened. The first was the assassination of Sir Lee Stack, Governor-General of the Sudan and Sridhar of the Egyptian Army, in Cairo and the second was the mutiny of Sudanese and Egyptian officers that led to the closure of Khartoum Military School and the expulsion of Egyptians from the Sudan. As a result of this deportation, there was an urgent need for

Sudanese to fill the vacancies and so Gordon College sent some of its graduates to Beirut for degree courses to enable them to replace the ostracized Egyptians and Syrians teachers. It was also agreed to expand the college and increase its numbers from 303 in 1926 to about 500 by 1929 (Gordon Memorial College, 1927).

The government carried a number of reviews to the college system and the whole educational system. The first formal inspection of the Gordon College in 1929 noted the increase in numbers. In addition, it observed deterioration in the teaching of English and History which may have been due to the replacement of the deported, experienced Egyptians and Syrians by less experienced Sudanese. Another review was carried out for the whole educational system in 1930 when the numbers of students at the college started to drop steadily. The whole educational system was reviewed in 1932. The reviewers discussed the future of the Khalwas, and improving elementary, primary and girls' education. They recommended strengthening, consolidating elementary schools and curtailing the output of Gordon College. Another important review was done by the De la Warr Educational Commission that was initially appointed to report on Higher Education in East Africa and it was invited by the Governor-General to visit the Sudan. The Commission was required to report on Gordon College and review the elementary and intermediate school systems in relation to Gordon College (Sudan Government, 1937). The Commission made many recommendations. One of them was that it regarded it as unnecessary to teach the Sudanese according to the education policies prevailing in Europe but it saw it wise to harmonize that with the Sudanese environment. It also emphasized expansion and improvement of education and then it referred to the inevitability of combining general education and technical instruction at the first years of the College. It recommended an increase in the number of British teachers in the College and demanded that the standards be leveled to that of a full British secondary course. The Commission also proposed the transference of Gordon College secondary school to another site to vacate the building for the future University College. Eventually, in 1946, the college emerged and was affiliated with London. In this same year, two secondary schools were opened and in the following ten years about 50 secondary schools were added. British teachers came to teach in these schools where the medium of instruction was English for all subjects with the exception of the Islamic studies. Experienced Sudanese teachers taught English to students in the intermediate school, the prior stage to the secondary

school, to enable them to understand secondary school science, math and geography books which were originally written for native speakers of English.

The recommendations of the De La Warr Commission had formed the basis for educational progress for the period 1938-46. Other plans and reviews followed to cover the period 1947-56. They concentrated on how education should prepare the country for self-government as rapidly as possible. Recommendations from special committees to improve the standards in academic secondary schools received revision and approval (Ministry of Education, 1949). As a result, in 1955, there were nine government secondary schools including a girl's school and a similar number of non-government ones

3.2.3 Modern Education after Independence

The Sudanese did not welcome the British because they had thrown out a national government. This resentment appeared in a number of revolts in many parts of the country, the most famous one being the mutiny of the Sudanese and Egyptian officers at the Military College. Then, the Graduates Congress was formed by the Sudanese graduates of Gordon Memorial College and called for independence. In 1956, the Sudan declared independence from Britain. The independent Sudan with the cooperation of the United Nations Organization gave education a great boost at all levels. First, the creation of a strong educational statistical unit helped the Ministry of Education "in expanding the educational system on a proper scientific basis" (El Gizouli, 1999 p. 31). The authorities worked towards unifying the educational system in the two parts of the country. Arabicization in the South started from 1957. Arabic has been taught in the Sudan in the light of making it the language of instruction. Religion became a basic subject in the curriculum and a major subject in the Secondary School Certificate which has strengthened the status of Arabic which also became a mandatory subject that determines success in the Secondary School Certificate. Education became free at all levels and the Ministry took the responsibility of many non-government schools. Girls' education received a special consideration and many schools of different levels were opened. The system of education consisted of three stages of schools: primary, intermediate and secondary. Each stage was of four school-years. In addition, upgrading Gordon College resulted in the appearance of University of Khartoum in 1956.

In the government's endeavor to develop education, it decided to look into the education set up. It formed a committee presided by a UNESCO expert, Dr. Matta `Akrawi. The committee forwarded its proposal through UNESCO to the Ministry of Education. The Ministry appointed Dr. Abdel Hamid Kasim, another UNESCO expert in educational planning to suggest steps for the implementation of `Akrawi's proposals. The Ministry received his report in which he proposed a new policy for education in November 1960. The proposal included six years for elementary and four for each of the intermediate and the secondary schools. It suggested the age of six for children to join elementary school. It recommended that the secondary school be divided into two stages, the Secondary School Certificate Ordinary Level (3 years) and the Advanced Level stage (one year). Also, the report suggested if later the experience proved that the senior secondary school students could sit for the ordinary level examination at the end of their second year, "then the last two years of that stage would be devoted to higher studies leading to the advanced level certificate and further to the Intermediate level in the same manner and the Six Form stage in the Grammar Schools of the United Kingdom" (El Gizouli, 1999 p.35). The committee called for radical change in the teacher training in all educational levels. The above stated proposals were not carried out and it was reported that they were under careful considerations by the government concerned bodies. Nonetheless, the subsequent years 1963/64 and 1964/65 witnessed a big expansion in education. There was an increase in the educational expenditure, representing 18.1% of the state expenditure (Ministry of Education, 1962 in El-Gizouli, 1999). A big leap (50% for boys & 343% for girls) in the number of new schools and new streams added to old schools (Wagi'alla, 1996). Legislation for a council for national education was achieved. In 1965, the medium of instruction in teaching sciences, math, history and geography in higher secondary school was changed into Arabic. In the same year, the Council of Ministers approved the resolution of incorporating the Islamic College of Omdurman into a university.

A form of education characterized by a professional, technical, vocational, military or administrative nature could be seen in institutes administrated by various ministries. The period of study was three years and the academic standards of these institutes were necessarily below university level. For example, there were the Khartoum Technical Institute which became University of Sudan, Intermediate Teachers' Training College at Bakht er Ruda which is now the University of White Nile, the Higher Teachers' Training Institute at Omdurman which is the College of

Education- Khartoum University , the Khartoum Nursing College, the School of Hygiene, the Sudan Military College, the Prisons Services Training School, the Sudan Police College and Shambat Agricultural Institute (ceased to exist).

In December 1989, the National Salvation Revolution reported its evaluation of higher education in the Prime Minister's address. He stated that the inherited higher institutions had accommodated 6% of the high school examinees. Moreover, most of the institutions were in the capital and that had deprived them from participating in the development of the rural areas. Besides, there was a continuous increase in students studying abroad. Allocated resources for higher education were inadequate. He also highlighted the weak connection between higher education, the values and language of the society. Then, he announced the decisions that had been issued by the government:-

1. Doubling the intake in all higher education institutions.
2. Introduction of studying by association in higher education institutions.
3. Annexing all existing higher institutions and colleges to their respective, suitable universities.
4. Establishing colleges in different states.
5. Establishing Sudan University for Sciences and Technology.
6. Licensing new non-governmental colleges and universities.
7. Completion of preliminary studies of using Arabic as a medium of instruction in higher education during the school year 1990-91.
8. Amending university and higher education laws to accommodate the above decisions, clearing contradictions and strengthening coordination between higher education institutions and the National Council for Higher Education.
9. Universities and high institutions should put a plan for upgrading their financial resources and secure full utilization of theatres, labs and libraries.
10. Review of higher education intake policies.
11. Formation of committees from the faculties of universities, higher institutions, and those interested in higher education to review the statuses of existing universities and institutions.

(Ministry of Higher Education and Research, 2001)

These decisions have been carried out. For example, all different states of the country housed one or more universities with affiliated colleges established in different parts of the state (#4). The Khartoum Technical Institute became Sudan University for Sciences and Technology (#5). A number of private colleges for

information technology, medical studies and other scientific studies emerged e.g. Computerman College, Academy for Medical Sciences and Technology (Khartoum), Khartoum Medical College, Al-Tiganah College (#6).

With regard to using Arabic in higher education (#7), universities started to use it except Juba University which has been exempted to accommodate Sudanese students who have studied in international schools within the country or outside. The medical college of Khartoum University used Arabic in lecturing in the year 1990-91 and stopped after the Council of the college suspended the project under the pressure of those who opposed teaching in Arabic.

Another hallmark in developing education, the Rotational Conference for Higher Education was held in February, 1991 and made many recommendations that the Council of Ministers accepted. These recommendations regarded the following:

1. Higher education policies
2. Technical Education
3. Economical policies
4. Institutional policies

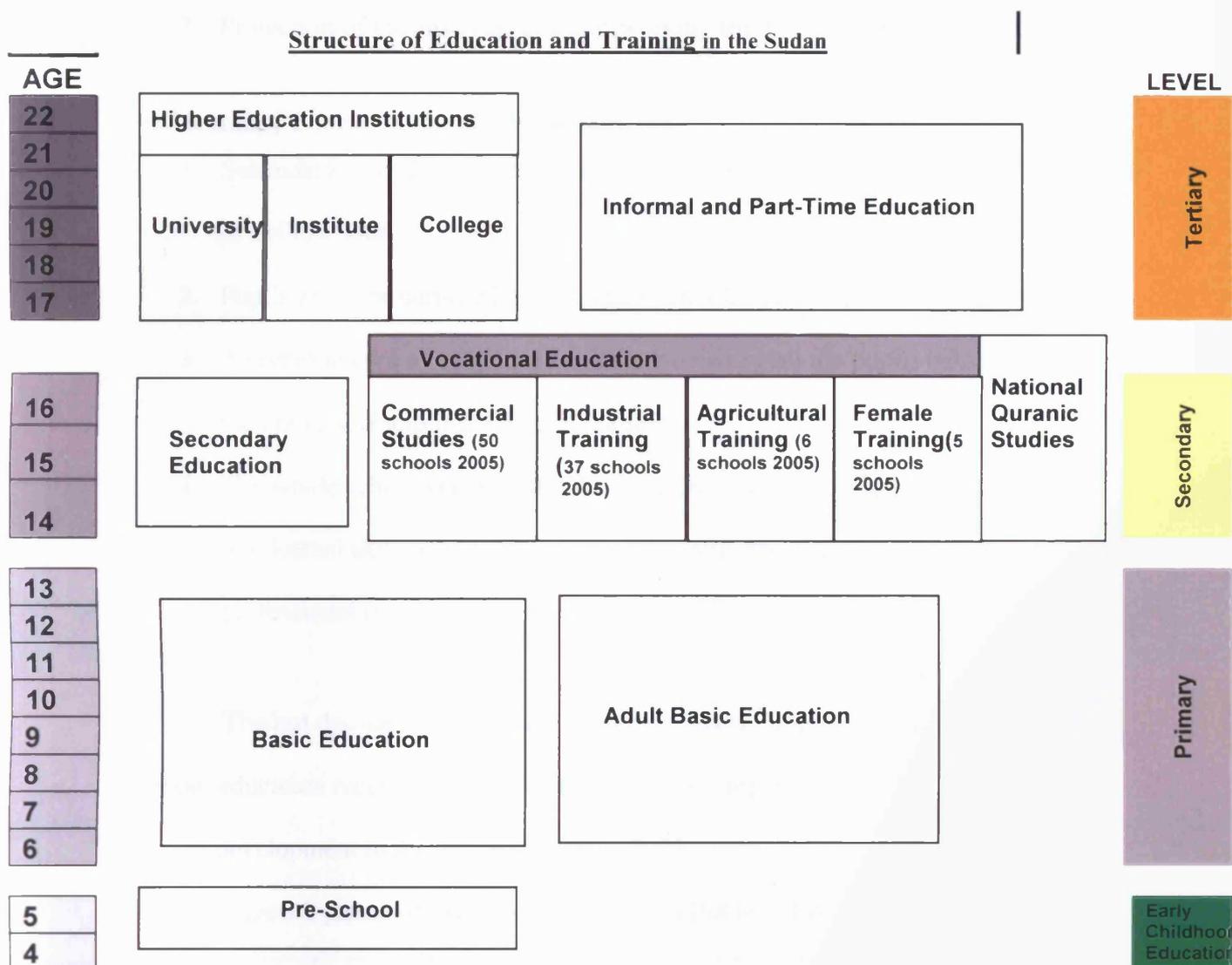
The government decisions and the conference recommendations resulted in establishing new universities that raised the number of governmental universities to 28 and private education to 3 universities and 36 colleges (Ministry of Higher Education and Scientific Research, 2003). The Sudanese Secondary School certificate has become the base for acceptance in the universities. Other certificates are measured against the SSS certificate and sitting for the SSS certificate is mandatory for those who are inside the country and planning to join a university. However, candidates from outside the country and have other certificates have to show proficiency in Arabic since it is the language of instruction in higher education.

3.2.5 Structure of Education and Training in the Sudan

The structure of education comprises of 5 educational stages:

1. Pre-school education for the age of 4 and 5 (kindergarten & Khalwa [Quranic School])
2. Basic education which lasts 8 years (age 6-13) and composed of formal and non-formal education
3. Adolescent and adult education and Private/ Special education
4. Secondary education for age group (14- 16)
5. Informal education

Fig.3 Structure of Education and Training in the Sudan



Now pre-school education is a priority in the educational policy of the Sudan. Basic education is a right for all children of school age irrespective of all discriminating factors such as geographical locations, race, religion or gender. Secondary education is the exit of general education and it is an important stage for students to prepare them for higher education or work life.

The general plan of Basic Education Curriculum emphasized the following:

1. Strengthening the religious creed (spirit) of the children
2. Acquisition of language skills (listening, speaking, reading and writing).
3. Provision of information, and fundamental experience.
4. Full-development of the child, and detection of his abilities, interests; growth and development of his skills and abilities.

1. Developing the sense of belonging (to the mother country).
2. Protection of the environment, and working for its development.

(FMOE, 2001, p.47)

In Secondary Education, the school is based on:

1. Secondary school is not considered to be a specialized school preparing students to definite jobs.
2. Pupils are to be admitted to secondary schools according to common criteria.
3. A common core of subjects should be studied by all the pupils before choosing the optional disciplines (subject matters).
4. The whole school syllabus should serve the attainment of physical and intellectual skills which help pupils to identify the different jobs and professional requirements.

(FMOE, 2001, p. 50)

The last decade has witnessed genuine efforts in improving education. Pre-school education received a special attention in development. The following table shows development in the period of 1989 – 2000.

Table 2: Development of Pre-school Education (1989/90-1999/2000)

Year	No. of Institutions	No. of Children	No. of teachers
1989/90	1650	106479	2983
1999/2000	7991	349306	12581
Growth rate	17%	12.6%	15.5%

Source: FMOE, General Directorate for Educational Planning.

Basic Education is considered the corner stone for any developmental efforts for the welfare of the people. Thus, it witnessed a considerable growth. The following table shows the enrollment rate in 1999/2000 as compared to 1989/90. This low enrollment ratio was due to children dropping out of school before completing the school cycle.

Table 3 Development of Basic Education (1989/90-1999/2000)

Year	No. of Institutions	No. of Children	No. of teachers	Pupil-Teacher Ratio
1989/90	7720	2076055	45349	38:1
1999/2000	11982	3137494	117151	27:1
Growth rate	4.5%	4.2%	8%	

Source: FMOE, General Directorate for Educational Planning

The following table shows the considerable progress in the expansion of secondary education in the period of 1989- 2000.

Table 4 Development of Secondary Education (1989/90-1999/2000)

Year	No. of Institutions	No. of Children	No. of teachers	Pupil-Teacher Ratio
1989/90	508	270455	6945	39:1
1999/2000	1694	401424	21114	19:1
Growth rate	11.4%	4.8%	12.1%	

Source: FMOE, General Directorate for Educational Planning

General education targeted all groups (children, adolescents, youth & adults) to widen its scope. Adolescent education expanded. For example, in 1999/2000, there were 83 centers and 63 of them were for girls in 10 states. The purpose was to equip them to enroll in secondary school.

The mobile schools for nomads were tried in different states like Darfur. The number of mobile schools rose to 431 in 1999/2000. Also internally displaced children from war affected areas or because of natural disasters were accommodated in 615 schools in 1999/2000.

3.2.6 Assessment Methods

Assessment was basically used for selection into the next level. It includes two types: grade examinations and school leaving examinations. Grade examinations are utilized to promote pupils from a current grade to the following one within basic school or secondary school in spite of the fact that there is no fixed standard percentage of success. Examinations are conducted three times a year and their results are approved by the school staff.

School leaving examinations includes the Basic School Certificate and Secondary School or Sudan National Certificate. Basic School Certificate is for pupils who have completed the 8th grade. Examinations are set at the state level. The passing rate is 50% and successful pupils will be enrolled in the secondary school. After 3 years in secondary school, students are eligible to sit for Sudan National Certificate on the condition that they meet the requirements for sitting for it. Successful students will be admitted to higher education institutions internally or abroad. Examinations are set by the General Directorate for Evaluation and Examinations at the Federal Ministry of General Education; the results of the examinations are approved by the Sudan Examination Board.

Requirement of sitting for the Sudan National Certificate (SNC) Examinations: -

1. Examination taking is not conditioned by chronological age.
2. All pupils belonging to schools recognized by the Ministry of Education have the right of sitting for the exam, provided that they have completed the secondary school courses and paid the fees demanded.
3. Non-formal pupils (not registered as regular pupils in a school) can sit for the exams, provided that:
 - They sat for the same exam previously
 - They sat for an equivalent exam.
 - They paid the fees required.
 - They are not formal students

(FMOE, 2001, p. 67)

Rules of awarding the Secondary School Certificate

1. Pass in Arabic Language
2. Sitting for Examinations in all compulsory subjects and at least three optional ones.
3. Certificate is awarded to he who has passed the Arabic Language examination, in addition to the three other compulsory subjects, and at least one optional subject. The percentage success is arrived at by calculating the marks obtained in Arabic, two compulsory subjects, and any two optional subjects. The percentage is obtained from seven subjects, including the four compulsory subjects and the best three optional ones.

3.2.7 The Profile of Higher Education

Higher education institutions consist of universities, institutes and colleges. Besides the formal education offered to regular students, there is an informal type of education represented in mature student program and part time students.

The number of public institutions increased from 5 universities and 1 polytechnic in 1989 to 28 governmental universities, 3 private universities and 36 colleges in 2003.

Enrollment

Students' intake jumped from 6856 in 1980 to 13,210 in 1990/91, 39,052 in 1999/2000 and 247,988 in 2005/06 (see the table below for more). The number of female students rose from 40% of enrollment in 1995 to more than 50% in the following years. For example, in 1999/2000, females were 60.9% of enrollment in public higher education institutions and 16.5% in private institutions. (see Appendix E for more statistics on education in Sudan)

Table5: Candidates, Success, Enrollment and Intake rate for 1980-2005

Year	Candidates	Success	Enrollment	Intake%
1980/1981	666352	38783	6856	17.68%
1989/1990	150656	89492	5950	6.65%
1995/1996	273842	168711	27143	16.09%
1999/2000	249417	183845	39052	21.24%
2001/2002	329350	242951	47552	19.57%
2002/2003	211087	142513	67850	47.61%*
2004/2005	259264	183304	174999	95.47%
2005/2006	307724	215823	247988	114.90%**

Source: MOE, Educational Planning Section of Educational Statistics

*Only Academic Education

** Enrollment included previous years certificates

Postgraduate Studies

Postgraduate studies increased to the extent that many applicants fail to find a tutor in doctorate programs due to the fully engagement of professors in handling big

numbers of candidates. The following table shows the numbers of postgraduate students in 1996.

Table 6: The number of Teachers and Postgraduate Students in 1996

University	Teachers	Postgraduate Students		
		Ph.D.	Masters	Diploma
Khartoum	583	496	2,333	502
Omdurman Islamic	173	90	355	909
Sudan Univ. for Sciences & Technology	232	25	55	208
Gezira	291	128	627	87
Juba	61	5	11	0
Quran Kareem	70	141	77	20
Total	1,410	885	3,458	1,726

Source: FMOE, General Directorate for Educational Planning

3.2.8 Medical Education in Sudan

Medical education started in Sudan when Kitchener School of Medicine was established in 1924. The aim of the school was to build up a staff of Sudanese physicians to carry out medical and public health work in the country. It was intended to train an average of six students every year to meet the demand of the country but the intake increased through the years. Students were given a medical course of four years and a further year of training as house-physician at one of the hospitals under the supervision of a British Medical Inspector. Other assisting facilities were added, for example, in 1928 the Stack Memorial Research Laboratories were completed. In 1934, years of study at the school were extended to five years and a six year as a house-physician. Then, in 1939, after opening the School of Science, the medical course was extended to six years. Two of these years were spent in the School of Science before joining the medical course.

Training of sanitary officers started in the School of Medicine in 1932 to replace the British sanitary officers working in towns and provide rural areas with officers who could offer an effective public health services. Nursing also had a college that was established in 1956 as a result of co-operative efforts of the Sudanese Ministry of Health and the World Health Organization. Khartoum Nursing College offered a three-year course of professional training in basic nursing.

After independence, medical studies continued to be delivered solely in English. The number of medical colleges started to increase through time and the number increased rapidly during the reign of the National Salvation whose government has mandated arabicization in higher education including medical studies. The following table shows medical studies facilities up to the year 2004.

Table 7: Medical and Hygienic Colleges in Sudan

Facility	Owned By	
	Government	Private Sector
College/School of Medicine	18	4
College of Dentistry	2	4
College of Pharmaceutics	3	5
College of Laboratories Sciences	5	5
College of X-Ray & Medical Photography	1	1
College of Nursing	2	1
College of Hygiene	2	-
College of Optics	1	-

One of the drives for arabicization is actualizing the national identity through projecting one's culture. Sudanese culture is part of the Islamic culture where medical studies had basis and history. The following section highlights this medical heritage that was nourished in the Islamic culture.

3.3 The Heritage

The first place to find a global answer for why arabicization has occurred is to look into history to realize the drives that spur its movement on. Thus, my intention in this section will be to shed light on the past or the history that influenced the study of medicine in the present time. My interest in the past will in particular be confined to the history of Islamic medicine to situate a justification for the recent language policies leading teaching of medicine in the Sudan and some other Arab states. I will highlight and reflect on the heritage that backs up the Sudanese culture in its endeavor to establish its identity.

I am not one of those who think the purpose of history is to forecast the future; nonetheless, I believe that history is essential for understanding the present, its influence on present decision-making and the set plans for the future. To my best knowledge, there are few studies that relate the history of Islamic science to the present. One of these few is an article written by Ahmed Y. Hassan, titled 'Some Obstacles Hindering the Advance of Science and Technology in the Arab countries'. He talks about the great

achievements of the medieval period and of the importance of Islamic science for the Scientific Revolution in the West. He attributes the lagging behind of the Arabs to a number of reasons (Hassan, 1980). What interested me in his argument are these two reasons: cultural domination and the use of foreign languages. I agree with him and I believe that the influence of the West has permeated down through the education systems (see Pennycook, 1994). Nonetheless, this does not lay the blame on the West for the Islamic world being a consumer of modern science and not a contributor.

This section introduces medicine in the early Islamic era where Muslims translated sciences from other nations, assimilated and then created more knowledge that later adopted by the West. The section also illustrates contradicting views of western historians about the Islamic contribution to medicine. Then, it concludes with shedding light on the history of medical education and the ongoing process of arabicizing medical education in the present time.

3.3.2 Medicine in the Early Islamic Era.

No ethnic or national group can claim that they are the only founders of science or medicine. Of the innumerable discoveries in these fields, only very few are really the work of a single individual, nation, generation or locality. Medical discoveries are often the summation of many contributions made by predecessors throughout the ages. The medical theories inherited from the Greek supplied a thread of continuity to professional learned medical practice throughout the medieval Islamic world. The Islamic Arabic civilization had gone through three phases before it was able to create and contribute to different sciences. Initially, it was the period of translation from other nations: Indians, Persian and Greeks, adoption and exemplification followed by the phase of creation and adding and finally, the era of the West translating the scientific wealth of the Islamic world (Sezkeen, 1977).

The first phase or translation started as individual initiatives before the State assumed the responsibility. Then, it spread among the rich before common people got involved. Libraries were built everywhere. In 891, there were more than one hundred libraries in Baghdad besides one hundred bookshops (Hunke, 1964). The Islamic caliphs encouraged this scientific movement urged by their personal fervor to sciences, the memorable words of the Prophet of Islam, “Go in quest of knowledge even unto the distant China”, and their feeling of duty towards religion, which propels its followers to obtain knowledge and privilege scholars. Sezkeen contended that Islamic attitude

towards sciences should be understood since it spurs not only its religious life but life in its totality. This stand has been the drive for acquiring sciences and all kinds of knowledge; otherwise, it could have been confined to translating necessities to their materialistic life rather than their intellectual life (Sezkeen, 1977).

Muslims conquered the Persian City of Gindoshapur with its great university and hospital intact in 636 A.D. Outstanding Muslim scholars followed the ways of the school of Gindoshapur (Leclerc, 1876) and translated from Indian, Persian, Greek and Coptic sciences into Arabic. The presence of many Persian medical words in Arabic medical books attests to the wide attention that had been given to transferring other nations' sciences. Besides translation, scholars wrote books on medicine, logic, science, and Platonic philosophy. For example, Hynayn Ibn Ishaq had translated sixteen Galenic medical books, participated with others in translating fifty-seven other books into Arabic and proofread seventy books written by his students. Manfred Ulmann described him as a contributor to the development of Arabic Language, not by adding new words or adopting foreign ones, but because he introduced an analysis and combination method that has enabled Arabic Language to express entangled, abstract ideas (Ulmann, 1978).

The birth of Islam has provided great impetus to human pursuits of knowledge. Muslims have started from the early times to preserve the Traditions (the speeches of the prophet) which I think awakened the spirit of collecting such writings in various forms. They extended this skill to collecting other nations' works. In the Amoyade era, the first translations were done when some scholars from the school of Alexandria were invited to Baghdad to translate some Greek books in medicine, astronomy and chemistry (Ibn Nadeem, 1985). In fact, the Amoyade caliphates encouraged translation of books, for example, Caliph Omer bin Abdel-Aziz ordered the translation of a medical book from Syriac into Arabic. By the Ninth Century, there was a great scientific wealth gathered in Baghdad and by the close of the 11th century A.D. there existed a network of libraries throughout the vast Abbasid Empire, and before the Mongol invasion, Baghdad alone had 36 big libraries. The Abbasid caliphates continued what was started by their predecessors. Sir John Bagot Glubb stated that the Caliphate of Al-Ma'mun (813 - 833 C.E.) was the 'golden age' of science and learning. Al- Ma'mun had always been devoted to books and to learned pursuits and his time witnessed the flourishing of medical schools (Gulbb, 2001). Also, George Sarton said about the same period of

Caliph Al-Mamun that the new learning reached its climax and a regular school of translation was created in Baghdad (Sarton, 1950).

It is not the aim of this study to give a full account of the Islamic medical contributions and the Islamic world physicians involved in the process during the medieval times. The given illustrated examples, which are few illuminated milestones in the history of Islamic medicine, are provided to give evidence that medical studies flourished in the Arabic language environment and to establish a base for the Arabization Movement in the Arab World. I will not dwell on the past and merely reflect on the erstwhile glory of Islam. However, I will concentrate on what might lead to understand the attempts for the resurgence of scientific thought and the spirit of discovery in the Arab Polity.

The physicians who were known to Medieval Europe and whose books affected its thinking and practice for centuries were many. The internist, Al-Razi (Razes); the surgeon, Al-Zahrawi (Abulcasis); the physician-philosopher of Islam, Ibn Sina (Avicenna); the philosopher-physician, Ibn-Rushed (Averroes); the pioneer in physiology, Ibn-Al-Nafis; and the Jewish Arab, Ibn-Maimon (Maimonids) are some of the outstanding figures whose efforts were instrumental in dispelling the gloom of ignorance that had enveloped Medieval Europe (Zahoor,1997). Renaissance in Europe took place under the influence of the Arabs and the Moorish revival of culture according to Robert Briffault in his book 'The Making of Humanity', he stated that, "Spain and not Italy, was the cradle of the rebirth of Europe. After sinking lower and lower in barbarism, it had reached the darkest depth of ignorance and degradation when the cities of the Saracenic world Baghdad, Cairo, Cordova, Toledo, were growing centers of civilization and intellectual activity." (Briffault, 1938) Moreover, Philip K. Hitti, in his book 'The Arabs: A Short History' acknowledged the role of the Arabs in establishing the link between the ancient and modern civilizations. He wrote, "Muslim Spain wrote one of the brightest Chapters in the intellectual history of medieval Europe... the Arab speaking peoples were the main bearers of the torch of culture and civilization throughout the world. Moreover they were the medium through which ancient science and philosophy were recovered, supplemented, and transmitted in such a way as to make possible the renaissance of Western Europe" (Hitti, 1949).

In a larger sense, it is possible to highlight succinctly the contributions made to medicine and its history by Muslim physicians and historians. First, Muslims have given medicine a form and a content unknown to previous peoples. In contrast to the

Greeks, their medical organization was made up of a school where theory was taught, a library full of books and a public hospital where it was learnt to examine the patient and identify the patient's sickness. The hospitals of Baghdad, Ray and Ibn Toulon are just a few examples. They required from any individual wishing to work in them and practice medicine to have an authorization granted by a jury chaired by a scientist. The jury was entitled to withdraw this authorization if it had considered the knowledge of the doctor to be insufficient for practicing medicine (Hijazi, 2001). Caliph Moktadir (931) established medical examinations to judge the fitness of medical students to become physicians (see Salems, 2001). Moreover, during the Abbaside regime, Ibnul Amig recommended the use of the white dress for physicians, which is still used today (Mottaleb, 2001). Islamic physicians were able to contribute because they had been familiar with surgery and had practiced different kinds of surgical procedures such as amputation, tonsillectomies, excision of tumors. Besides, they also had defined each illness by several symptoms. Ali Ibn Rabban discussed Physiology in the 9th century. He described the brain, heart and liver as the main organs of the human body and described each in detail. He stated that the stomach, gall bladder, spleen and lungs are also essential for the maintenance of the normal physiology of the body. Al-Razi (Razes) and Ibn Sina (Avicenna) described new sicknesses such as variola, measles, Spina, Ventosa, smallpox, and pleurisy (Hijazi, 2001). Ibn Sina (Avicenna) wrote a book on Anatomy in Bokhara in the 11th century. He described, for the first time in the history of medicine, the theory of bacteria and virus as the cause of disease. Ibnul Khatib postulated the same in the 14th century and cited Plague as example. Ibn Sina (Avicenna) attested the presence of bilirubin, albumin and serum in the blood. Mottaleb said about Ibn Sina's descriptions that "nobody for 200 years after him could add anything in addition to his descriptions" (Mottaleb, 2001, p.3).

It may justifiably be claimed that the dictionary of the biographies of famous physicians compiled by Ibn-abi-Usayabiah, the mediaeval Syrian Arab historian and biographer, *Uyun al-Anba fi Tabagat Al tibba*, (The Dictionary of Physicians) may well have anticipated the present-day books of biographies and Who's Who in different disciplines. If Ibn-abi-Usayabiah's comprehensive work was not the first to have addressed such kind of discipline we have in mind, founded as it was upon the Arab quest for genealogy, the claim might have appeared unwarranted; but, since the Western interest in biography as an art is definitely in the proper sense a mediaeval phenomenon, biography in its classified form derives in a large measure from Islamic contributions to

the subject (Hakim & Kamal, 2001). The Islamic medical books were not only translations. Al-Razi's (Razes) book the 'Continet' included 70 subjects that could have been stand alone books. It contained the whole medical knowledge of the tenth century. Ibn Sina's (Avicenna) famous book, the 'Canon' has been a major medical reference for medical students and professionals during the whole Middle Ages (ibid). It was through the pioneering efforts of Muslims that the Greek Herbal of Pedanios Dioscorides was transmitted to mediaeval Europe in addition to the establishments and discoveries of many matters such as medical schools and medicaments (see Gulbb, 2001). The Muslims also organized the pharmacy and the laws of pharmacopoeia or stock of drugs. Famous doctors were Al-Razi (Razes) in Iran, Al-Macoudy and Ibn Abbas in Iraq, Ibn al Jazzar in Morroco and Abu Qasim Al Zahrawi (Abulcases) in Spain. Many Europeans were in the Islamic schools and particularly in Cordova in Spain, for example, Constantine I'African (Hijazi, 2001). Constantine arrived in Salerno in Italy in 1077 after he had learnt medicine during his trip in Egypt, Syria and Baghdad where he studied Mesue and Serapion. He translated the books of Ali bin al Abbas without mentioning the name of the author. He also translated a treatise on ophthalmology (medicine dealing with eye) of Hynayn and the Viaticus of Ibn al Jazzar. Moreover, he organized the Salernitan School imitating the Islamic schools of the East and Spain. The success of this school led to the creation of other similar schools following the same patterns. The most famous schools were: Bologna, Padua, Pisa and Naples in Italy, Montpellier and Paris in France. (Ibid) Without Islamic medicine, Islamic hospitals, Islamic pharmacies and medical schools, the above-mentioned schools would properly never have been created in the way that enabled them to hold the torch of the scientific revolution in the West. In fact, before the foundation of Montpellier school along the lines of Islamic schools, anarchy dominated the practice of medicine in Medieval Europe and any one could have a school to teach medicine. Another observation, Montpellier School used 16 books to teach medicine and 13 of them were Islamic medicine books (ibid). The most important subject in teaching medicine in the school of Montpellier in the thirteenth and fourteenth centuries was the Islamic Medicine. Teachers of Montpellier School recommended the books of Ibn Sina (Avicenna), explained the books of Al-Razi (Razes) and Mesue to their students. They quoted Galen from time to time and Hippocrates was rarely quoted and other Greek doctors were purely and simply unknown. Teachers were called the Arabic scholars as they confined themselves exclusively to teach Arab medicine. The fondness for Arab

medicine was common to all the universities in Europe (Astruc, 1767 in Hijazi). For example, in 1395, the library of the school of Paris contained eight books; five of which were books of Arab medicine (Sabathier, 1837). Arab medicine was also valuable for individuals, for example, Louis XI wanted to have a copy of Razes' book 'the Continent' in his library. He requested the library of the school of Paris for the book on loan. After stormy discussions, it was agreed that he deposited twelve silver plate sets and a hundred golden crowns (Hijazi, 2001).

Muslims' contribution to the preparation of medical formularies (books of medicinal substances) and discovering new drugs with therapeutic properties or additional curative properties is found in the works of Ibn-Julju Tafsir, asma' al-adwiyal al-mufradah or An Exegesis of the Names of Drug Simples, now in Madrid and the Dhakhirah-I Khwarazmshahi (in Persian) by Sayyid Ismail Jurjani. Prior to thirteenth century, there were several formularies. Europe adopted medical formularies three centuries after Al-Kindi (Hakim & Kamal, 2001). Muslims could also be credited for their introduction of inhalation anesthesia (Hunke, 1969) and the discovery of Ibn al-Nafis of the lesser blood circulation many centuries before the English William Harvey announced it as his contribution. He is the main forerunner of Servetus, Vesalius, Colombo and Harvey in the description of the pulmonary circulation (Soubani et al, 1994). Ibn al-Nafis should have been credited for his precedence and his contributions (see Myerhof, 1935; Haddad & Khairallah, 2001; Mettler, 1947; Coppola, 1957; Al-Dabbagh, 1978; Qatayyah, 1984).

As a summary to this part, we provide the testimony of Professor Allen G. Debus who attributed the rise of Western science to the crucial role played by the transmission of Greek and Arabic science and medicine in the Middle Ages and the Renaissance (Debus, 2001). Notwithstanding, the question that forces itself is why, then, the Islamic World ceased to contribute in the sixteenth and seventeenth centuries. Two reasons will be highlighted here and other reasons that apply to centuries up to now will be discussed later. First, on a most basic level, the fragmentation of the Islamic World signified the demise of its role in leading science and indicated the transference of the torch to the West. Second, contra to the early centuries, Muslims showed relatively little interest in Western science with an exception of very few works such as the work of Paracelsus and his disciples. Another example is a book reflecting the events of the contemporary Western Scientific Revolution written by the Aleppan physician, Salih Ibn Nasr Allah Ibn Sallum (1669/1670), Gayat al-itgan fi

tadbir badan al insan (The Culmination of Perfection in the Treating of Human Body). It was not merely a translation but a monumental contribution. However, some western historians did not see that, their stances were loaded with negativity towards the contribution of the Islamic world to medicine. The following paragraphs explain the stances of some of them.

3.3.3 Western Historians

The West did not recognize the greatness of the Islamic contributions and Western historians have purposely avoided acknowledging the debt the modern civilization owed to them up to the beginning of the 18th century. Robert Briffault has more convincingly exposed early historians who totally ignored the influence of the Islamic civilization and said, “The debt of Europe to the ‘Heathen Dog’ could, of course, find no place in the scheme of the Christian history, and the garbled falsification has imposed itself on all subsequent conceptions” (Briffault in Salems, 2001. p.2). More Westerners have gratefully acknowledged this patrimony that enabled Europe to transcend all previous phases of evolution. Recent research in the history of science has shown the role of Islamic medicine in the period of the eighth through the thirteenth centuries A.D., besides, the scientific contributions to the Scientific Revolution of the sixteenth and the seventeenth centuries (Debus, 2001). European universities were using books of different disciplines as a source of learning for five to six hundred years (Lebon, 2001). Homeld reported that the Arabs were the first inventors of the method of chemical preparation of medicines which was taken up by the School of Salernitam and then after along time, it spread to the southern Europe. (Homeld, 1997) The Arabs started a new era of studying medicine and the science of medication. They added two thousand herbs to those of what was known at the time. (ibid)

However, some French authors concurred in the denial of the existence of an Islamic medicine in the basic meaning of the word. They admitted that Arab scholars had translated Indian and Greek works and transmitted them later to Europe through Spain. They belittled the effect of Arab medicine on Europe and considered it “only a translation or travesty of the Greek medicine” (Darembers in Hijazi, 2001, p.1). Some of them described Islamic medicine as inferior, without anatomical discoveries or contributions to physiology (Barbillon in Hijazi, 2001). The denial and trial to put out of sight the obligation of Europe to the Islamic Civilization is contradicted by other

famous Westerners' views (see Meyerhof, 1935; Holmyard, 1937; Briffault, 1938; Hitti, 1949; and Sarton, 1950). They showed that the Greek material received by the Arabs was not simply passed on to others who came after but reviewed and corrected. In fact, it has developed in its Arabic surroundings. A very real advance was made on the translated Indian and Greek sciences (O'Leary in Zahoor, 1997). George Sarton wrote in the 'Introduction to the History of Science' that, "Through their medical investigations they not merely widened the horizon of medicine, but enlarged humanistic concepts generally" (Sarton, 1950 p.3). In the words of Campbell, "The European medical system is Arabian not only in origin but also in its structure. The Arabs are the intellectual forebears of the European" (in Syed, 2001, p.2). Then, what happened to the Islamic World that ended its contribution and participation? Why has it lagged behind the West? Answers to these questions are provided in the following paragraphs.

In the late centuries, the Islamic World lost zeal in pursuance of sciences. There were several causes for this intellectual decline of the Islamic World. For example, the destruction wrought by the Mongol hordes. Changiz Khan, better known as the 'Scourge of God' wiped out all traces of Islamic civilization in Turkistan, Iran, Afghanistan, and Asia Minor. He burnt remorselessly the entire intellectual heritage accumulated through centuries by Muslims. Then, Hulagu Khan, the Mongol, destroyed Baghdad and reduced to ashes all the intellectual treasures. "It is said that millions of books were thrown in the River Tigris and its water turned dark" (Salems, 2001, p.5). Also, the Christian conquerors of Spain tried to efface all traces of Islamic civilization from the land. Cardinal Ximenes, Archbishop of Toledo, burned all the literary treasures that were collected from different libraries in Spain. Besides, there were many other reasons in recent times that led to stagnation. The colonization of the Islamic world is one of the forces that has tried to capitalize the role of the west, belittle and curtail the Islamic contribution in its education policies. In fact, colonization succeeded in shunning the history of Islamic contribution in the occupied territories' education especially in science which was introduced in its western dress. In the following paragraphs, medical education from the early times of the Islamic civilization until the hegemony of the West of most of the Islamic world and the efforts to rectify the situation through arabicization are discussed.

3.3.4 History of Medical Education in the Islamic World

Were there medical studies through Islamic history? In fact, Muslims conquered the Persian City of Gindoshapur with the great university and hospital intact in 636 A.D. The medical schools developed later in the Islamic world followed the pattern of Gindoshapur School. In these schools “medical education was serious and systematic. Lecturers and clinical sessions included in teaching were based on the apprentice system” (Syed, 2001, p.2). Al-Razi (Razes), Ibn-Sina(Avicenna) and Ibn Zhur (Avenzoar) assumed the positions of both hospital directors and deans of medical schools at the same time. They studied patients and presented the cases to their students. They also wrote and preserved clinical reports for teaching. Registers were maintained. Candidates for medical study were required to study alchemy as a prerequisite before they received basic preparation from private tutors through private lectures and self-study. Anatomy was taught by dissecting the apes, skeletal studies, didactics, lectures and illustrations. Study of medicinal herbs and pharmacognosy (descriptive pharmacology dealing with crude drugs and simples) rounded out the basic training (ibid). Then, students were given full clinical training. They were assigned in small groups to a famous physician and experienced instructors for lectures, discussions, ward rounds and reviews. As they progressed, they were exposed to the subjects of diagnosis and judgment. Trainers emphasized clinical observation and physical examination. Students were asked to examine patients and report six major factors: patients’ actions, excreta, the nature and location of pain, and swelling and effluvia of the body (Garrison, 1929). After that, students worked in the outpatient department, examined, reported their findings to their instructors, and discussed before treatment was prescribed to the patient. Very sick people were admitted as inpatients and their records were the responsibility of the students (Syed, 2001). Clinical curriculum in different medical schools was different but in general the mainstay was internal medicine. After completion of training, students sat for a license examination and only those who passed were allowed to practice medicine. In all this process, Arabic was the medium of instruction, curriculum and the language of research.

Then, the Ottoman Empire imposed the Turkish language as the state language in the Arab countries they ruled in the Sixteenth Century. At their time, Al-Azhr University in Egypt confined its teaching to pure Islamic religious studies and ignored all the sciences that had been pursued in the Islamic era, in Baghdad, Cordoba and elsewhere. Hence, Al-Azhr scholars neglected to follow the western scientific

revolution until Moh'd Ali ruled Egypt. He worked on modernizing Egypt in line with the western patterns. Though Egypt of the khedives, Turkish rulers of Egypt, adopted western educational systems, it insisted on translating all sciences into Arabic. The Khedives brought experts, sent students to study abroad and required them upon their return to translate sciences into Arabic. Moreover, they mandated the use of Arabic as a medium of instruction. For example, when Clot made the school of medicine in Abu Zabl for the military in 1827, he was teaching medicine in Arabic through a translator until he and his staff learned Arabic and used it in lecturing (Eid, 1968). The returned students translated famous French medical books into Arabic, the medium of instruction used in medical studies except in post-graduate courses. This continued until the British colonized Egypt and thus the school of medicine changed to the English language, followed by the Egyptian Public University that was built in 1908 and the other universities established during the British occupation. As aforementioned in the introduction that the struggle against the Ottoman Empire and the Western Colonization has led to the emergence of the Arab nationalism. Arab nationalism worked on arabizing or promoting Arabic culture where the colonizers had attempted to change it. Consequently, it aimed at arabicizing or replacing the colonial languages by Arabic. Thus, arabicization has turned up as a movement which generated a lot of discussions in seminars and conferences at the Arab world level and at the national level. The following paragraphs highlights arabicization of medical education, a slice of the arabicization movement.

3.3.5 Arabicization of Medical Education

Supporters of arabicization account using Arabic as a medium of instruction as a major instrument and a necessity in building their nations' identities, while others esteem it as a religious obligation and a civilized realization. On the other hand, there are those who oppose, think sciences should be preserved and introduced in the language they flourished in and consider arabicization a drawback from advancing. However, they do not realize that many European countries, as well as Japan, China and others teach medicine in their national languages. In the following paragraphs, I will trace the movement of arabicization in higher education in the Arab World highlighting the decisions and recommendations made for arabicizing medical colleges on the grounds that it reflects the high importance of the process which has led me to embark on this study.

The constitutions and higher education regulations in all Arab States regard Arabic as the language of education. Libya and Sudan have issued directions to use Arabic as a medium of instruction in higher education. Many think that such supportive decisions should be stated to drive arabicization while others think the legal support is there in the existing constitution and the problem is lack of official practicality and support. In fact, foreign languages are still used in education even after the independence of the Arab States. Levantine countries teach in English except Syria. The Jesuit University in Beirut teaches in French. The Maghrib countries (North Africa Arab countries) adopt French with the exception of two colleges in Libya, which use Arabic. Somalia uses Italian while in Egypt English is used except the College of Medicine at al-Azhar University which decided recently to teach forensic medicine and psychiatry in Arabic (AIHC, 1997). It is worth mentioning that the College of Medicine in Cairo taught medicine in Arabic for 60 years (from 1827 to 1887) before it changed to English under political considerations (ibid). Egypt could have followed Syria when both countries declared their short-lived union; they issued a political decree of arabicizing the teaching of medicine but it has never been practiced in Egypt. Another example is the Syrian Biblical College established in Beirut in 1866 (now it is known as the American University of Beirut) which used Arabic in teaching medicine and pharmacology until it was replaced by English in 1884 for political reasons also. In fact, medical colleges in the Arab World continued to use foreign languages with the exception of the Syrian universities, which have been using Arabic since their commencement. However, there have been some initiatives in some countries to return and teach in Arabic, for example, the teachers of the school of science in Cairo University stopped using English in lecturing in the mid 1960s.

The early pioneers of arabicizing medicine left very important works, including four bilingual dictionaries and many Arabic medical journals such as al-Ya'sub, al-Muntakhab, and al-Thana' (AIHC, 1997). These efforts have been followed by a systematic move for arabicization. This move has been on the international level, regional (Arab Polity) and national (within the countries) as the following paragraphs illustrate.

At the international level, Arabic entered the arena of medicine when the World Health Organization (WHO) adopted it as one of WHO official languages in Geneva in May 1972 (Decision: WHO, 25-50). Based on the Arab State request, WHO has used Arabic in its council and negotiations with the Arabs, (Decision: WHO, 28-34) and

since then, it established the Arabic program for printing and translating. The East Mediterranean Regional Office of WHO held a regional conference for arabicizing medical education in the Arab countries in Cairo, Egypt, June 1990. It turned up with a plan of implementation and a number of other decisions (ibid).

Regionally, the Council of Arab Health Ministers has played the major role in promoting arabicization. It has called for arabicization in seminars and conferences. In its third conference, in Cairo, in 1974, it called for using Arabic as a medium of instruction in teaching medicine (Miniminah, 2001, online). Then, in Tripoli, Libya, 1977, it asked Arab States to raise funds to support WHO projects of using Arabic and urged the organization to expedite translation into Arabic (ibid). The Council took a practical step in Kuwait, in 1978, when it decided to form a committee from Arab medical colleges' representatives to make recommendations for translating some medical textbooks into Arabic. In a joint effort, the Council, WHO, the Union of Arab Physicians and the Arab Organization for Education, Culture and Science issued the Unified Medical Dictionary in Arabic, French and English in 1987 (ibid), this dictionary has become the main source for translating medical textbooks. In the same year 1987, the Council held its twelfth regular meeting in Khartoum and decided to form a team to handle the issue of arabicization. Representatives in this team were from:

The East of Mediterranean Regional Office-WHO.

The Arab Organization for Education, Culture and Sciences.

The Arab Council for Medical Specialties.

The Arab Center for Documentations and Medical Literature.

(Decision #10, ibid)

In the thirteenth meeting in Amman, Jordan, April 1988, the Council requested the ministers to have their governments' approval on arabicization for the Geneva's meeting in May 1988. In Geneva's meeting, the Council received the feedback and suggested a seminar be held in Damascus to explore the Syrian experience of arabicization. It also decided preparation of a paper on the recommended steps of implementing arabicization policy (ibid). In Libya, March 1989, the Council discussed the recommendations of the Damascus arabicization seminar and decided on the formation of a committee from its members and the deans of medical, dentistry, pharmacology and hygienic science colleges (ibid)

Other organizations have contributed to arabicization. For example, in Cairo, Egypt, Jan., 1988, the Union of the Arab Physicians seconded the Council of Arab

Health Ministers' decision to teach medicine in Arabic. The Union thoroughly discussed arabicization in its Twenty Seventh meeting held in Tunis, Oct., 1991. Another example is the Arab Organization for Education, Culture and Sciences which held jointly with the Sudanese Higher Commission for Arabicization the Seventh Arabicization Conference in Khartoum, Feb., 1994.

These endeavors have been supported by similar attempts at the individual countries level. In Syria, a seminar suggested by the Council of Arab Health Ministers was held in Damascus, Dec., 1988. It made recommendations on arabicizing medical and hygienic education and the Council of Health Ministers discussed them in its meeting in Libya as mentioned above. In Bahrain, the Society of Bahraini Physicians held a conference in Manama, Feb., 1993. It discussed the practical steps of arabicizing the teaching of medicine and medical sciences in the Arab World. It reviewed and evaluated what had been achieved and the timeline or completion schedules of implementation (ibid).

We conclude that Arabic was central in the early Muslims efforts to gather knowledge and it was the medium of instruction in the Arab polity before the intervention of colonization. Thus, it is logical to claim that the inherited culture and the culture that Sudan belongs to support its endeavor to use Arabic as a medium of instruction. However, what are the perceptions of the affected subjects, faculty members and students of Arabic as a medium of instruction? What are the advantages and disadvantages of using Arabic/English as a medium of instruction in teaching medicine? Answers to these questions and others mentioned in the introduction are the focus of this study and they will be sought in the following chapters.

The following chapter, Chapter Four, presents the methodology followed to bring about the findings that are discussed in Chapter Five. Chapter Four also describes the site of the study, the subjects, and the instruments used in collecting the data.

Chapter Four

Methodology

This chapter presents the tools, document analysis, questionnaires and interviews, used in gathering data. It also illustrates their construction and provides an ethical frame and a justification for using them. It further informs about the site of the study, the participants and their characteristics. It concludes with how the collected data was treated and interpreted.

It is quite sensible to assume that an adoption of a particular orientation to research would have straightforward implications for design. A preference of positivist paradigm leads to the choice of data gathering techniques. These techniques provide outcomes that lend themselves to quantifying procedures. The preference has also important consequences for the practical conduct of inquiry, as well as for the interpretation of findings.

Within the quantitative research strategy, it is possible to use the survey approach (see Blaxter et al, 1996, p.2). According to Hutton, the survey research “is the method of collecting information by asking a set of pre-formulated questions in pre-determined sequence in a structured questionnaire to a sample of individuals drawn so as to be representative of a defined population” (Hutton, 1990, p.8). The definition identifies two important issues: the structured questionnaire and the sampling of subjects. The structured survey is one of the four basic social science research techniques. The others being document analysis, interviews, and observations. The structured survey is not the sole survey instrument. Structured or semi-structured interviews, self-completion or postal questionnaires, standardized tests of attainment or performance, and attitude scales are other survey typical data gathering techniques that Cohen and Manion (1996:83) reported.

An exclusive reliance on one method may lead to bias and distort the picture of the slice of reality under the study (see Cohen & Manion, 1994, p.233). Hence, I have used three techniques, document analysis and two survey tools to cross-reference and triangulate findings. I have found support in using a combination of tools in the argument of Blaxter et al (1996). They stated that a researcher “may use alternatives from the different dimensions in combination as appropriate to study a particular set of

research questions” (Blaxter et al, 1996, p.63). Marshall and Rossman (1989) take a similar vein arguing, “researchers should design the study according to the research questions they seek to answer” (Marshall & Rossman, 1989, p. 42). Nonetheless, some other researchers, for example, Lincoln and Guba (1985) oppose mixing paradigms and argue strongly that quantitative and qualitative paradigms represent different worldviews and they do not mix well. This is because the basis of quantitative research is “verified hypotheses established as facts or laws” while qualitative research consists of “nonfalsified hypotheses that are probable facts or laws” (Denzin & Lincoln, 1994, p. 112). On the other hand, other researchers do not agree with them and consider the distinction overstated (See Brannen, 1992, Hammersley, 1992 cited in Brannen 1992, pp.39-55).

However, I believe in the appropriateness of linking paradigms, especially where the qualitative and quantitative research have equal weight in an integrated study or where the qualitative method plays a subsidiary role as the case of my study where facts and conclusions were drawn from past events to establish evidence and causes for decisions and language policies regarding Sudanese higher education. The attitudes and stances of participants were obtained through a positivistic model where responses for predetermined questions were elicited and used for inference and interpretation. The following paragraphs show why I have used three tools, their advantages and disadvantages.

The use of several tools was dictated by the nature of the study which is about a language policy, adopting Arabic in teaching medicine instead of English. To situate the study, historical grounds for the language planning and policies were established. Language planning and language policies have been documented in the minutes and decisions made in study committees and conferences. Document analysis was the means employed to surface these decisions. Second, the study investigated the attitudes of the students and their faculty members. The literature review shows that the appropriate technique to gather data on language attitudes is a self-report questionnaire (see Reinert, 1970; Farr, 1971; Babich et al, 1975; Kolb, 1976; Dunn et al, 1979; McLaughlin, 1987; Reid, 1987; O’Malley & Chamot, 1990; Gardener & MacIntyre, 1993; MacIntyre, 1994; Green & Oxford, 1995). Third, the use of interviewing, a basic mode of inquiry (see Seidman, 1991, p.2), was used to provide insights of the studied domain to assist in the preliminary preparation of the questionnaires (Nias, 1993) and triangulation of the

findings. The suitability of document analysis, questionnaires and interviews in this study relied on the gained benefits and an awareness of their pitfalls.

Document analysis, questionnaires and interviews have been chosen for these reasons. First, analysis of documents is necessary since one cannot conduct research in isolation from what has already been done. Added to this, documents can provide an immense amount of data available from multifarious views. Second, the use of questionnaires was determined, as aforementioned, by the study which is seeking to highlight the attitudes and views that students and their teachers hold about arabicization. A large number of researchers have used the questionnaire in collecting data about attitudes (see Reinert, 1970; Farr, 1971; Babich et al, 1975; Kolb, 1976; Dunn et al, 1979; McLaughlin, 1987; Reid, 1987; O'Malley & Chamot, 1990; Gardener & MacIntyre, 1993; MacIntyre, 1994; Green & Oxford, 1995). In fact, questionnaires are not the sole useful tools for collecting data. Interviews and observations are used too. One merit of questionnaires over interviews and observations is that they can be utilized in some situations which are unlikely to be accessible for the other two. Finally, these techniques represented a heuristic tool for data triangulation in the study.

To conclude this section, the three tools were chosen because they were expected to be instrumental in providing data that help in answering the research questions. For example, document analysis of language policies, seminar and conference papers informs about the first research question that inquires about language policies and the arabicization process in the Sudan. The questionnaires and the interviews probed into the perceptions of the participants and gathered information to answer the second and the third questions about the advantages and disadvantages of the medium of instruction in teaching medicine and the perceptions of the participants about the medium of instruction.

The following paragraphs sketch the characteristics, constructions, applications, advantages, and disadvantages of the above chosen tools, document analysis, questionnaires and interviews.

4.2 DOCUMENT ANALYSIS

Document analysis was used in conjunction with other techniques in search for language decisions that took place in the history of education in the Sudan. Data was collected from various kinds of documents. These included library-based documents

aimed at bringing about a base for the study, computer-based or online documents tracing and providing historical or contemporaneous evidence, in addition to documents that have a policy focus, for example, decision-making bodies and conference papers. The categorization of Tuchman (1994) of primary and secondary sources was followed in choosing documents. Tuchman (1994) argues that categorization of documents can be based on their sources as primary or secondary and then, provides a distinction between these sources. He states “secondary sources are books and articles written by historians and social scientists about a topic. Primary sources are most often the historical data (documents or practices) of the period one is trying to explain”. (Tuchman, 1994, p.318)

First, secondary sources from the literature review such as articles written about similar implementations of language policies in higher education in Sudan and other countries (Algeria, Tunisia and Morocco) were utilized. They have provided insights into how education policies have been put into effect, what the implications are and problems tied to them. A lot of information was gleaned from documents about the intricate motives of sponsoring and implementing a language policy.

Primary sources were papers of conferences on using Arabic as a medium of instruction in higher education, minutes of change-study committees, official documents, and correspondences regarding disseminating decisions on language policy in higher education. The authenticity of the knowledge the document purports to transmit was crosschecked. For conferences and decision-making meetings documents, the sources of these documents were checked and some witnesses ‘where possible’ were interviewed regarding people involved in the preparation or creation of the documented data. Thus, authenticity of the sources and accuracy of the data have been checked to include reliable data in the study.

Nonetheless, I have not taken the documents at face value because “they are artificial and partial accounts” (Blaxter et al, 1996, p. 187). They lack natural and spontaneous quality since they are intentionally selected, proofread and maintained. They represent the author’s or a group’s viewpoint, or focuses which are not necessarily factual. I critically assessed and scrutinized the documents to serve the purpose of the study (ibid).

There are some disadvantages in my document analysis. The issue of my study is of controversial nature and thus the related documents revealed the struggle and

politics of power and reported the argument of the majority neglecting the minority groups' viewpoint. Similarly, conference papers reflect the viewpoint of the presenters without accommodating the criticism they face. This was confirmed when I attended the arabicization conference held in Al-Gezira University on Aug.28th, 2002. The final documents included only what the presenters tried to disseminate and nothing about the counter arguments.

It is also worth mentioning that the secondary sources are dependable since they are not first hand information. Basically, they are not an original account of the addressed problem (see Best, 1970). In other words, they were not addressing arabicization in Sudanese higher education directly but similar implementations in other places. Nonetheless, they have thrown light on present and future trends (see Hill & Kerber, 1969). In addition, document analysis offered information which, perhaps, the documents were not originally intended to give. Further, documents constructed social reality and versions of events (see May, 1993, p. 138). To conclude, document analysis was used to provide a global picture and a base for understanding the context of the study.

4.3 THE SURVEY

The survey methods used in this study were questionnaires and interviews. In what follows, I will look at questionnaires bearing in mind that much of my discussion of this is applicable to interviews, too. The following paragraphs will highlight the popularity of questionnaires, their ranges, their construction, the chosen type, and how they were conducted. Next, moving on to interviews, I will illustrate their different characteristics. Then, I will draw out and compare the advantages and disadvantages of both the questionnaires and the interviews. Ethical issues concludes the section

4.3.1 The Questionnaire

Questionnaires are popular in gathering information and the collected data may be either qualitative or quantitative. In fact, a questionnaire is "one of the most widely used social research techniques" (McDonough & McDonough, 1997, p.159). Cohen and Manion considered them the best survey tools in an educational inquiry (see Cohen & Manion, 1994, p.94). Although, McDonough and McDonough agreed with Cohen and Manion, they considered questionnaires "quite labor-intensive in construction and analysis" (McDonough and McDonough, 1997, p.171). Questionnaires gather data from a potentially large number of respondents. They are the only feasible means to

reach a population large enough to allow statistical analysis of results. They come in all shapes and sizes. “The optimum length of questionnaire is governed by the expected yield: the more work respondents have to do the less likely, given a free choice, they are to return it” (McDonough & McDonough, 1997, p.174).

Questionnaires and interviews give access to the most complicated social and educational issues. These issues may be an abstraction based on the concrete experiences of people (see Seidman, 1991). At the heart of these research methods is an interest in other individuals’ points of view because they are of worth. For example, in my study and as part of researching the impact of adopting Arabic as a medium of instruction in medical colleges, it became very important to investigate the attitudes of those in the field. Thus, I tapped experiences of those who study/work in the medical profession and sought their reflections and attitudes towards the arabicization of medical colleges.

Questionnaires can be administered in many different ways: posted, over the telephone, online, or face-to-face. Choosing one of these means will have an impact on the design of the questionnaire. Another realization, questions can be designed to gather either qualitative or quantitative data. By their very nature, quantitative questions offer specific targeted information, free from elaborations.

To conclude, one of the advantages that endorsed the use of the questionnaire was their popularity in gathering information. They can also be used on a small scale, in-house and on large scale. They are flexible in gathering data since they can be done in several different time slots. Besides, the data can be gathered from different subjects in different locations, for example, different universities in different cities as the case of this study.

4.3.1.1 The Design

Constructing a questionnaire necessitates keeping it relatively easy to answer, easy to record and evaluate, user-friendly and free of ambiguity. A mix of question types has been selected in order to maximize “the range and detail of information elicited” (MacDonough & McDonough, 1997, p. 177). Nonetheless, the following caveats of Cohen and Manion (1994: 93-94) have been avoided:

- Leading questions, which suggest there is one desirable answer.

- Highbrow questions, using unfamiliar words, which are likely to be misunderstood.
- Complex questions with many subordinate parts.
- Irritating questions or instructions, asking for example responses in many boxes simultaneously.
- Negative questions, in particular double negatives.
- Open-ended questions on self-completion questionnaires.

In addition to the above list the following were also avoided:

- Ambiguous questions
- Recall questions, asking respondents to remember events or feelings that happened long ago.
- Hypothetical questions, those beyond respondents' experiences.

These guidelines were followed in order to produce an efficient questionnaire. A mixture of questions was chosen. They were clearly laid out. Letters were attached to inform participants of the aim of the questionnaire and request them to respond. The letter was printed on colored paper (see Appendix C, p.215).

The questions in the questionnaire (see Appendix A pp.181-208) followed these types:-

a. Factual questions/ quantity or information questions

They are usually multiple-choice questions but not exclusively. I chose the multiple types to get specific information and avoid misleading the participants. Specifically, it was used to obtain information about gender, class, nationality, native language and high school education.

b. Scaled Questions

I used this familiar type which presents statements not questions. They are sometimes called 'opinionaries' since they elicit opinions rather than mere facts (McDonough & McDonough, 1997). I utilized a familiar type, the Likert scale, which introduces statements and asks for the degree of agreement (strongly disagree, disagree, neutral/no opinion, agree, and strongly agree). The shades of the evoked opinion may be given numerical values. Nonetheless, the midpoint is often difficult to interpret e.g. neutral or 'no opinion'.

c. Ranked Questions

I have included questions that required the respondents to rank (downwards) statements or use a grid/table in ranking. Both types looked for opinions and shared the advantages and disadvantages of the scaled questions.

b) What do you see as main reason(s) for the decision of using Arabic as a medium of instruction in the college of medicine? Please rank all those relevant in order from '1' downwards.

empowerment of Arabic political factors cultural identity

socioeconomic factors pedagogical(educational) factors

other (please write)_____

d. Attitude scale questions

This type was used to give 'a much fuller picture' (Cohen & Manion, 1994). In the following example, each item presents a 'locational marker' (ibid) which by itself tells very little about the respondent's attitude, but more of related items or 'locational markers' give a much fuller picture by aggregating information about the lecturer's attitude. e.g.

Tick what you think that a lecturer should do.(The respondent may tick more than one)

A lecturer should

present the content of the course in standard Arabic.

use simple Arabic to present his lecture.

use familiar Arabic terms.

interject the English term where appropriate

e. Multiple-Choice Questions

Wh-question words prefaced the multiple-choice questions used in these questionnaires. If a respondent is given a set of choices, he/she can indicate more divisions in the information, thus the questions were tailored to allow one response. Moreover, the temptation of the respondent to base his selection on the

construction of the choice was curtailed. For example, prolix choices which use more words than necessary, in other words, the given options for a question include one that has more words than the others or is longer than the other three; some respondents may assume that it is the correct choice on the grounds that it is more elaborated. Maintaining reasonable length of the choices eliminated his/her presumption that the long worded option must be the pertaining one.

f. Yes/No Questions

Very few of this informative type were utilized because they cause uneasiness to respondents and constrain their ability to hedge with 'it depends', 'well', or 'sometimes'. When they are used, the dichotomous nature of the question was avoided by adding a third option.

Also, it is worth mentioning that open-ended questions were not used though they instill in the respondents the feeling "that they can contribute more individual points of view and more detailed information than is elicited in closed questions" (Blaxter et al, 1996, p.162). Notwithstanding, "they take too much time to answer properly and too much time to analyze" (ibid, p.162). The fact is that some of the students contributed through commenting on some questions. (See Appendix D pp.216-219 for students' written comments)

4.3.2 Interviews

Interviewing was the third technique that was employed in the study for a number of reasons. First, it is a powerful tool to gain insights into educational issues through understanding the experiences of those involved in the process (Nias, 1993). Second, in interviews opinions are given using a genuine and explicit language to let the interviewer understands his stance. Added to this is the attendance of the interviewer to the interviewee's queries in the interaction gives the interview a merit over the questionnaire where the surveyor may not address the participant's questions timely.

Researchers categorize interviews from different perspectives. For example, Powney and Watts (1987) distinguished between respondent (structured and semi-structured) and informant interviews (unstructured). The interviewer has control over the respondent interviews while the control is left in the hands of the interviewee in the informant interview. Cohen and Manion(1996) presented four types of interviews:-

- 1) The structured “in which the content and procedures are organized in advance” (Cohen & Manion, 1996, p.273). Very little freedom is given to the interviewer to make changes.
- 2) The unstructured interview is open and has greater flexibility and freedom.
- 3) The non-directive interview is the one where the control is given to the interviewee to “express her subjective feelings as fully as spontaneously as she chooses or is able” (ibid, p. 273).
- 4) The focused interview is a development from the non-directive due to the increase of the degree of control over the interview.

The study included two types of interviews: initial and primary. The initial interviews in this study exemplified unstructured and non-directive interviews in the sense that a leeway was given to interviewees to express themselves in their own way. In addition, interviewer’s guidance was minimal. The primary interview was a structured one which is widely used in data collection on attitudes (see McDonough & McDonough, 1997, p.183). Open-ended questions were developed for the interview to encourage the interviewee to expand, and go into more depth, besides, facilitating his/her co-operation which eventually resulted in building good rapport with the interviewee. Second, probes (attentive listening, enquiring facial expressions, repeating the response, mmhm...?) were used as a device to instigate the interviewee and get his/her full engagement to expand on his/her responses

Interviews in this study, aimed to be of twofold: ancillary and primary (McDonough & McDonough, 1997). In the ancillary phase, the initial interviews intended to build up knowledge of the institutional context in higher education and capture a detailed and comprehensive picture of the status of the implementation of arabicization (Nias, 1993). The ancillary interview is used to test, suggest new questions and work as a means of gathering data (Nias, 1993). Also, Kerlinger’s suggestion of using the interview in validating findings of the primary questionnaire was utilized. (Kerlinger, 1969).

An initial interview was conducted with a former lecturer who participated in the arabicization process at the medical college of Khartoum (See Appendix B pp. 209-214 for script) as part of the overall strategy towards understanding the context of the study. The collected information was searched for patterns, themes and interpretations. It was “the first stage in opening up key issues” (McDonough & McDonough, 1997,

p.185). Then, some physicians were approached to solicit their views on teaching medicine in Arabic or English. In the process, some feedback was collected from the interviewed medical professionals to formulate the questions of the primary interview and the questionnaires. Some researchers argued that it is necessary to understand the norms the interviewees have for talking about themselves and talking about their experiences (see Briggs, 1986; Goldstein, 1995). Consequently, a group of acquaintances who are lecturers at the school of medicine were approached and asked to reflect on their experiences in using English and Arabic as a medium of instruction. To facilitate the continuity of the interview, a few open-type questions were listed on a card, and used to ensure that the interview focus on the needed data and elicit to the utmost (see Nias, 1993). This exercise was an opportunity to test the incipient, chosen questions for the primary interview for the sake of reformulating and redefining the questions. In addition, the ancillary interviews helped in being progressively more aware of areas and aspects that lecturers felt were important to talk about and investigate. Further, these interviews provided a post-hoc justification for the selected questions to be included in the primary interview.

As the case in the preparation of the questionnaire, the following types of questions were avoided in the interviews: -

- 1) Long questions of which an interviewee may forget parts.
- 2) Multiple-barreled questions such as: what do you feel about your medium of instruction now compared with when you started lecturing?
- 3) Guiding the interviewee by asking him/her leading questions that presume a particular answer such as: since you are a product of a British system, which medium of instruction you find yourself competent in: English or Arabic?

As aforementioned, interviews and self-administered questionnaires are main tools in surveying (see Cohen & Manion, 1994). They are frequently compared emphasizing the advantages of one over the other in certain aspects. Interviewing entailed a great deal of time and generation of expenses in procuring audio tapes. Added to that, interviews necessitated asking questions, transcribing data, analyzing it, and sharing the results with others. Questionnaires did not demand as much time as that. In interviews, people in face-to-face encounters might have shunned their honesty for the sake of maintaining social ties with the interviewer. However, anonymity in questionnaires can encourage greater honesty and thus the questionnaire is more reliable

than the interview. On the other hand, interviews allow the interviewer to glean more data, attend interviewee's queries, display interest in what the interviewee said or intended to say. In questionnaires, the researcher may not be in the scene during the time the subjects are responding and hence he/she could not have the chance to attend their queries timely. Another drawback, the questionnaires might be filled in hurriedly which may affect its reliability (McDonough & McDonough, 1997, pp. 185-187). Each profession has its own organizational culture which may be different from others. An interviewer needs to understand this culture of the interviewees of the medical profession to establish access and make contacts with them.

To conclude, the choice of these research techniques was determined by what I was trying to learn or in other words provide answers for the research questions. Questionnaires and interviews are powerful tools to gain insights into educational issues through understanding the experiences of the individuals who are involved in the educational process. Document analysis presents a historical support and a milestone in the procedure of collecting data.

Interviewing, as a method of inquiry, conforms to people's ability to make meaning through language and satisfies interest in others' stories. It has an advantage over the questionnaire since it reflects an individual's views more than a questionnaire that is susceptible to be collaborated if it is not well managed. It is argued that the use of contrasting methods considerably reduces the chances that any consistent findings are attributable to similarities of method (Lin, 1976). Besides, the use of triangular methods helps in overcoming the problems of 'method-boundedness' (see Cohen & Manion, 1994). Finally, I contend that my choice of document analysis, questionnaires, and interviews has been very instrumental in gathering data to answer the research questions. The following sections will illustrate how the questionnaires and the interviews were conducted.

4.4 Conducting the Questionnaires

After constructing the questionnaires, the first step was to pilot them. Copies of the faculty member's questionnaire were given to two former lectures and the students' questionnaire was forwarded to my daughter, a medical student, and some of her classmates. Very good feedback led to amendments in the construction of the questionnaires and showed a need for an Arabic translation. Thus, the questionnaires

were given to two people; one of them is a professional translator. Their translations were compared to my translations and final copies were produced. Again, the translated questionnaires were completed by two friends and my daughter. One thousand and five hundred copies of the finalized students' questionnaire and one hundred copies of the faculty member's questionnaire were printed. The faculty member's questionnaires were put into reply-paid envelopes to encourage participants to complete and drop them in the nearest mailbox.

Piloting of the questionnaires highlighted a number of issues, not only an idea of the amount of time needed to collect data but also to judge the reliability of the questions. It showed that the questions can collect data that is needed to answer the research questions. In general, piloting indicated the feasibility of the overall study plans and enabled me to make modifications as necessary before committing myself. It had led to a change in the initial strategy to something more effective, feasible and productive.

To get official access to the site (medical colleges of Khartoum, Omdurman and Al-Gezira), the deans of these colleges were approached. The deans asked college registrars to assist in conducting the questionnaires. The registrars assigned helpers from their staff. They were promised an incentive. The assigned helpers were oriented to their role in distributing, explaining how to complete the questionnaires and collecting them. The recruited helpers distributed the students' questionnaire to volunteers in the study halls and collected them immediately after completion. The faculty questionnaire was given out to faculty members who were given the choice of using the reply-paid envelopes or handing them in to the colleges' registrars. The helpers succeeded in giving out 1012 student questionnaires (67.5%) and 77 of the faculty questionnaire (85.6%) The helpers encouraged the students to answer all questions by explaining that completeness of the questionnaire will reflect their stands and have good impact on the results.

Some means of conducting questionnaire such as over-the-telephone or online were avoided because they are more time-consuming and do not allow the participation of a larger number of people. Notwithstanding, they may get a better response rate.

However, this should not imply that the chosen means in conducting the questionnaire did not have pitfalls. In fact, it had some limitations. First, the control over the questionnaire environment was somewhat limited since at the scene there were only the recruited helpers who might not have experience in handling questionnaires

other than the given briefing. Besides, the respondents did not have a chance to have an immediate feedback on any queries.

4.5 Conducting the Primary Interview

I practiced interviewing on my workmates, taped the sessions, and then evaluated the flow of the questions and the intonation patterns. The situation for the colleagues may have been superficial, detached and lacking enthusiasm. However, it helped me in mastering the usage of the tool. Then, individual members were chosen on the basis to include representatives from each faculty in the colleges in the interview. They were approached and informed of the purpose of the interview. They were requested to contribute to the study by participating in the interviews. Most of them expressed willingness to participate; however, their work schedules made this commitment unsuccessful.

Initially, I introduced myself, the purpose of the interview, and secured permission to tape or take notes. Taping was not welcomed by the first interviewees and thus, I did without it. Confidentiality of the interviews were assured and emphasized. Next, straightforward, non-threatening questions such as factual questions were used to start the interview. As a matter of fact, the interviewee was walked through the interview in a manner that turned out sufficient data (Nias, 1993). I secured enough time for the interviewees through listening, seldom interrupting except to prompt or offer another line of enquiry. I tried to instill my interest in what was said and diligently avoided reflecting my stand, whether it is an agreement or disagreement (Fontana & Frey, 1994). Moreover, I had organized the interview questions in a sequence that eased its flow. First, I presented the main body leaving sensitive items until later in the series. Then, I used straightforward items to remove any situational tension that may have evolved. Finally, I closed by thanking and encouraging the interviewee to add: Any points you would like to make that we may have missed? I transcribed the interviews and gave them to the interviewees who sanctioned them. Contacting the interviewees of this study was the most tedious and difficult mission since they were physicians with very tight time schedules, they teach in the college, work in hospitals and clinics and some of them assume other responsibilities at the departments of Ministry of Health.

4.6 Ethical issues

Attached letters to the questionnaires introduced me to the subjects, informed them of the purpose of the questionnaire, and provided them a contact means (email address). Confidentiality of the individual replies was assured and those who were interested in receiving feedback of the results were promised it. The length of the questionnaires was kept to reasonable limits; the faculty's included 50 questions while the students' had 42. I intended to have the respondents feel comfortable with the questionnaire. They proceeded starting with simple and encouraging questions. In the middle of the questionnaire, they handled demanding questions and then responded to question expected to be more appealing to the participants. A brief note was inserted at the end of the questionnaire appreciating completion and thanking the respondents (See Cohen & Manion, 1994. p.97). These measures were taken to secure that the questionnaires obtain the utmost feedback.

The consent and willingness of the interviewees to participate in the interview was secured. Attentive listening accompanied by a pleasant face was utilized in showing interest in interviewees' responses and reflecting an appreciation for their involvement and contribution. Situations that might lead interviewees to a feeling of condemnation, embarrassment, repudiation and regret were avoided. Also, tension that builds up and puts the interviewee in the mood of being interrogated was lessened through creating a non-threatening, relaxed atmosphere. Interviewees were shown transcripts of their response to assure them the correctness of what had been recorded and its confidentiality was emphasized.

4.7 The Site

The sites for this study were three medical colleges in the universities of Khartoum, Omdurman and Gezira. I have chosen these universities for the following reasons: First, they are distinguished from other provincial universities for their ability to attract students from all parts of the country. Second, they have experienced arabicization which has given the participants the advantage of reflecting on the process. Third, the process of arabicization in each was carried out differently. Khartoum College tried arabicization for one year and then the project was frozen by a decision at the college level. Omdurman has got the assistance of the Syrians and Iraqis in teaching medicine in Arabic. The Syrians and Iraqis have mirrored their two countries' models of arabicization. Al-Gezira College has relied on its faculty in

translating textbooks and promoting arabicization. In 2002, Gezira Medical College received the title of the best medical college in the Arab World for serving the society in its neighborhood.

The site included the medical colleges of Khartoum University, Gezira University and Omdurman University with its two colleges: the female college and the male college.

4.8 Participants

The informants in this study were from the students and faculty members of the three medical colleges in the aforementioned universities.

a) Students

1012 students volunteered to take the students' questionnaire. 61% completed questionnaires were received through the recruited helpers in the universities.

The following table shows students grouped according to gender, nationality and native language:

Table 8. Participants by Gender, Nationality and Native Language

University	Gender			Nationality				Native Language	
	Female	Male	Total	Sudanese	Other Arab	African	Foreigner	Arabic	English
Khartoum	107	97	204	204				204	
Omdurman	86	67	153	143	9	1		151	2
Al-Gezira	134	126	260	253	4	1	2	258	2
Totals	327	290	617	600	13	2	2	613	4

The above table shows that female participants were more than males and most of the participants were Sudanese with Arabic as native language. The following table reports the pre-university studies and the used language of instruction.

Table 9. Participants categorized by high school location

University	High School			Language of Instruction (taught in)	
	Sudan	Arab country	African	Arabic	English
Khartoum	168	36		195	9
Omdurman	128	25		150	3
Gezira	226	32	2	257	3
Totals	522	93	2	602	15

Not all classes in the universities were present (√) during conducting the questionnaire; some of them were on holiday (X) as the following table reflects:

Table 10: Participating Classes

Universities / Classes	1 st year	2 nd year	3 rd year	4 th year	5 th year	6 th year
Khartoum	X	√	√	√	√	√
Omdurman Male	√	X	X	√	√	√
Omdurman Female	√	√	√	√	√	√
Gezira	X	√	√	√	√	X
Legend	Classes participated in the questionnaire: X did not √ did					

First year students in Khartoum, second and third year in Omdurman Male and first and sixth years of Gezira were not present at the time the questionnaire was handed out. Notwithstanding, the study has covered most of the diverse groups of the universities.

b) Faculty Members

Faculty members in the three universities were approached through the registrars and the recruited helpers. 22 questionnaires were distributed at Omdurman Medical Colleges, 30 at Khartoum and 25 at Al- Gezira. Though the helpers, the registrar and myself used all means to encourage the faculty members to complete the questionnaire and return it, only 11 (14.1%) were returned. A number of reasons contributed to the low return. First, Khartoum Medical College was closed for many months due to political disturbance. Second, professors and lecturers at these universities have very tight work schedules. They teach in many medical colleges, work

at public and private hospitals, besides; they see their patients in their own clinics. Finally, there may have been miscalculation of their busy schedules that led to the assumption that the questionnaire will be easily answered and returned. Interviewing the faculty was not also a success. It has faced the same problems. Many of the interviewees gave me a very limited time after hours or late evening due to their engagements in a variety of commitment. The low return of questionnaires and the few interviewees resulted in considering the perceptions of faculty sample as indicative and not representative of the faculty members.

Only 11 of the faculty members of the three universities returned the completed questionnaire. The following table shows the distribution of the members by university and gender

Table 11: Faculty Returned Questionnaire

University	Female	Male	Total
Khartoum	-	2	2
Omdurman	1	1	2
Gezira	1	6	7
Total	2	9	11

Males who completed and returned the questionnaire were more than females. All the participants were Sudanese whose native language was Arabic. Their studies and initial training was in English. 5 of them were members of Arabic academies, 3 were in English academies while two had not joined any academy. One faculty member published books, 7 wrote reports and only one wrote articles and the publishing language was English for 7 of them and Arabic for 3. Experience as faculty members showed that 4 had more than 10 years, 3 had 5 to 10 while the other four had less than 5 years of experience. The following table shows the faculty participants experience in using either Arabic or English as a language of instruction in teaching medicine.

Table 12: Experience in a Language of Instruction

Teaching in	Arabic				English			
	More 10	5 to10	Less 5	None	More 10	5 to10	Less 5	None
University				2	1		1	
Khartoum				2			1	
Omdurman			1	1			1	
Gezira	1	2	3		2	1	3	
Totals	1	2	4	3	3	1	5	0

All the faculty participants had experience in using English and Arabic as languages of instruction except 3 instructors who reported not to have experience in using Arabic.

4.9 Treatment of the data

The surveys' responses were tallied and grouped in Excel sheets. Students were treated separately from instructors. Then, as shown in Table 13, the questions for students were grouped under these categories: Choice of a language, English Language versus Arabic Language and arabicization based on the relationship between the expected data and these categories.

Table 13: Grouping Questionnaire's Questions

Group	Included Questions
Choice of a Language	2, 7, 8, 9, 10, 11, 12, 21, 24
English Language versus Arabic Language	3, 4, 5, 6, 13, 15, 16, 17, 18, 22, 23, 28, 30, 31, 32, 33, 34, 35, 36, 40, 42
Arabicization	14, 19, 20, 25, 26, 27, 29, 37, 38, 39, 41

First, data was arranged with the help of Microsoft Excel to describe and explore various ways of looking at them. Percentage of respondents to each question was calculated using Excel capabilities with the exception of questions 20, 22, and 28 which were treated differently. Tables and charts were created to make comparisons and elicit more information. In questions 20, 22 and 28, means were calculated and then charts were built for the same above reasons.

To conclude, this chapter has presented the tools used in gathering data and how the data were treated and interpreted. The following chapter provides the gathered data tabulated according to the arrangements of the items in the questionnaires utilized in collecting the data. Results are presented in Chapter Five and discussion is left to Chapter Six.

Chapter Five

Results

Introduction

The two questionnaires given to students and faculty members in this study were intended to gather information about the attitudes of these participants towards the languages of instruction used in teaching medicine in the universities of Khartoum, Omdurman and Gezira. The findings of the questionnaires and the faculty members' interviews are presented in this chapter. The chapter introduces the outcomes of the students' questionnaire contrasted with the findings of the faculty members' questionnaire where appropriate and concludes by highlighting the captured themes in the interviews of the faculty members. The results are grouped and introduced under these topics:

- 5.1** The languages used in answering the students' questionnaire
- 5.2** Use and Perception of medium of instruction
- 5.3** Students' readiness for receiving medical studies in English.
- 5.4** What are the difficulties that students face?
- 5.5** English as a medium of instruction
- 5.6** Arabicization or Arabic as a medium of instruction
- 5.7** Students' Language Preference
- 5.8** Interviews with Faculty Members

The findings of the students' questionnaire have been displayed under the above topics. First, the findings of the first year and second year were grouped and named Group A, the third and fourth years into a group named Group B while the fifth and sixth years into a group called Group C. The display was presented at two levels: a macro and a micro. The macro level presented the findings at university level while the micro level presented Groups A, B and C, the college groups' findings. The display at the macro level presented a global indicator of the findings while at the micro level detailed findings were introduced using tables and charts. Second, the findings of the faculty's questionnaire were reported as indicators and confirming tool. Third, the main themes in the interviews were introduced before the chapter was concluded. Discussion of these findings and their implications is handled in Chapter Six.

5.1 The Languages Students Used in Answering Questionnaire

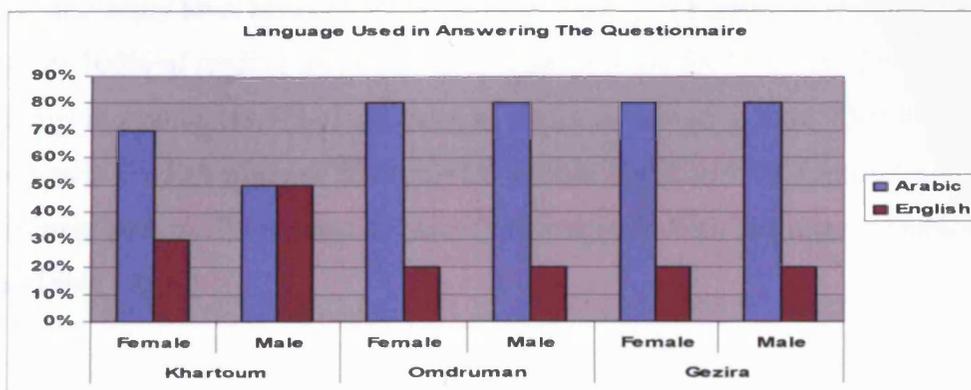
The first observation is the students' selection of a language to answer the questionnaire. Chart 1 below shows an interesting pattern, the participants selected Arabic where English was expected. For example, in Khartoum University students have been exposed to much English and thus were expected to use English in answering the questionnaire; however, 70% of female participants and 50% of male participants chose Arabic while 30% of females and 50% of males preferred English.

On the other hand, in Omdurman University Arabic has been the dominant language of instruction for all taught subjects. Thus, students were expected to use Arabic in answering the questionnaire which was reflected by most students (80% females and 80% males). Only 20% of females and an equal percentage of males chose English.

Gezira participants were not different from Omdurman participants. 80% of the females and 80% of the males answered the questionnaire in Arabic while 20% of females and 20% of the males used English (see Chart 1).

This observation raised a number of questions. For example, why had some participants chosen a language to answer the questionnaire different from the dominant language of instruction in their college? In particular, why had many students in Khartoum selected Arabic in responding? Was it easier in their expectation or what was the reason behind that? Also, why had some of Omdurman and Gezira participants chosen English instead of the Arabic which is claimed to be the medium of instruction? These findings raise many issues that the discussion in Chapter Six highlights.

Chart 1: Languages Students Used in Answering the Questionnaire



5.2 Use and Perception of Medium of Instruction

This section includes the findings of the following items of the student' questionnaire: 4, 6, 7, 8, 9, 10, 12 and 13. The items are displayed under their respective subsections. Questions 4 and 6 asked the students about the percentage of their reading assignments and textbooks in Arabic and English. Questions 7 and 8 explored whether students were asked or required to write reports or communicate in Arabic, English or a mixture of both. Question 9 asked about the medium of instruction of oral lectures. Question 10 and 12 asked about the language of instruction used in bedside teaching and labs respectively. Question 13 explored the students' perception of the English used in lectures and clinical rounds.

The findings are presented under these topics:

5.2.1 Reading assignments Language,

5.2.2 Textbooks Language,

5.2.3 Reports and Research Language,

5.2.4 Lectures and Tests Language,

5.2.5 Bedside-teaching (clinical rounds) Language,

5.2.6 Perception of English as the Language of Instruction.

Faculty members' findings are highlighted in contrast to the students' findings in each sub-section.

5.2.1 Reading Assignments Language

Question 4 What percentage of reading assignments in your medical classes are in: a) Arabic b) English?

Data generated in answering question 4 above are presented at two levels, the macro level (university level) and the micro level (groups' level). At the macro level, data at the university level revealed the following: 79.9 % of Khartoum respondents reported to have 90-100% of reading assignments in English while 55.9% claimed not to have any readings in Arabic. 49.7% of Omdurman students showed to have 90-100% of their readings in English while 40.5% reported to have less than 50%. Gezira University showed a different pattern. There were not high percentages in both languages, Arabic and English. (See Table 14)

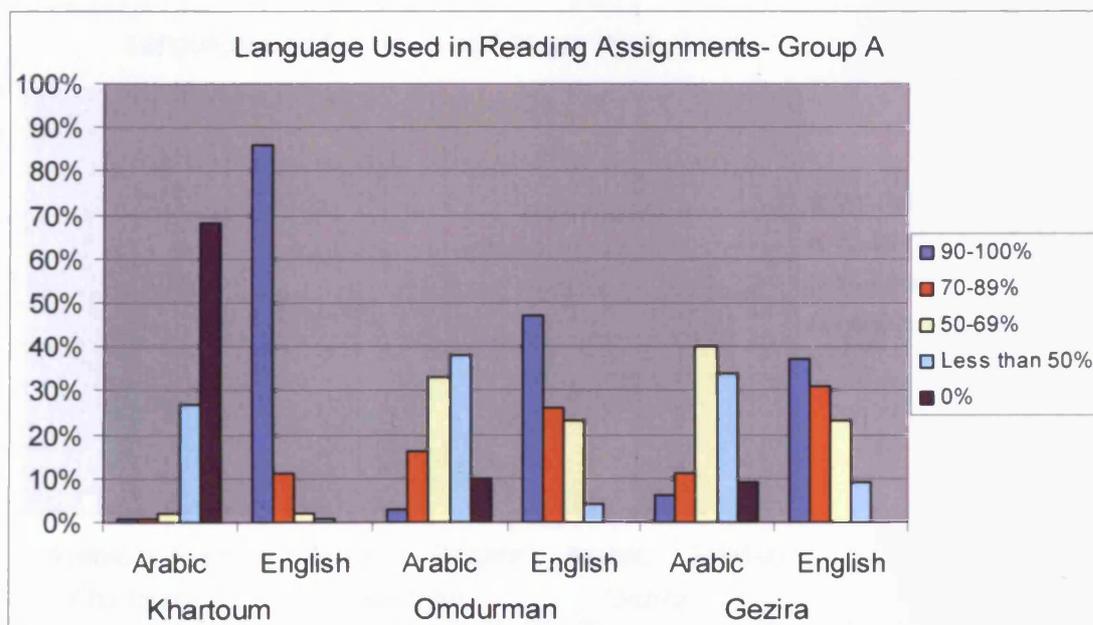
Table 14: Reading assignments Language

Percentages	Khartoum		Omdurman		Gezira	
	Arabic	English	Arabic	English	Arabic	English
90-100 %	1.0%	79.9%	2.6%	49.7%	7.3%	37.3%
70-89 %	0.0%	8.8%	11.8%	26.8%	22.3%	31.0%
50-69 %	2.9%	2.0%	28.8%	18.3%	29.2%	16.5%
Less than 50 %	24.0%	1.0%	40.5%	5.2%	27.7%	11.2%
0%	55.9%	0.0%	16.3%	0.0%	13.5%	3.5%

In contrast, at the range of 70-100% Khartoum (88.7%) showed to have more reading assignments in English than Omdurman (76.5%) and Gezira (68.3%). Reading assignments in Arabic received very low ranges and percentages in the three universities.

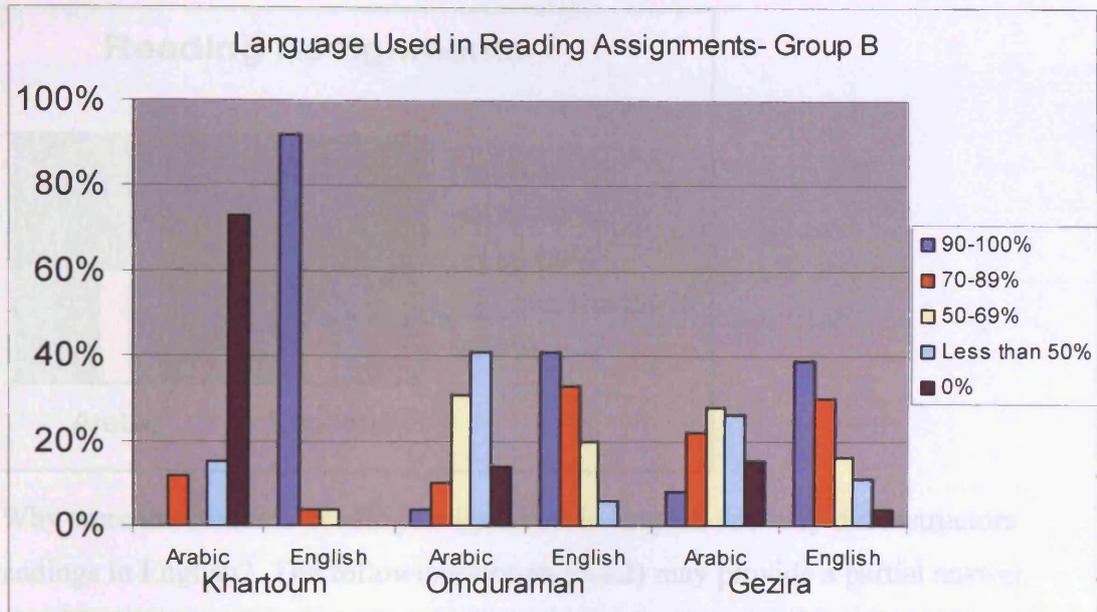
At the micro level, Group A in the three universities showed that English is the most used language in the students' reading assignments. Khartoum University reported almost not to have Arabic in reading assignments while the other two universities showed fair use of Arabic (See Chart 2)

Chart 2: The Language of Reading Assignments – Group A



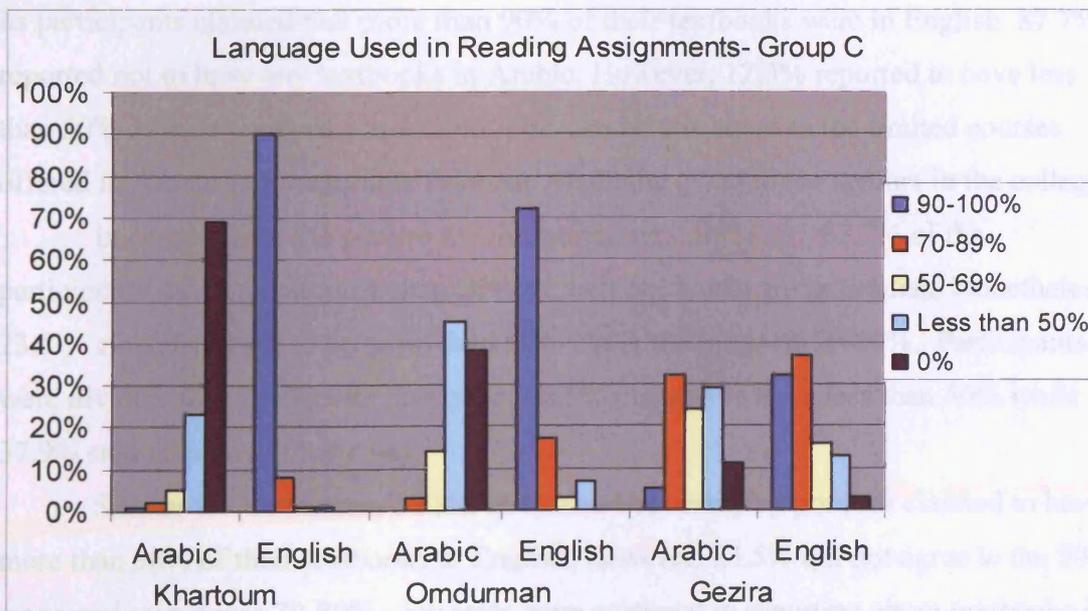
Group B in the three universities showed a similar pattern to Group A. Group B of Omdurman and Gezira reported less percentage than their mates in Group A. (See Chart 3)

Chart 3: The Language of Reading Assignments –Group B



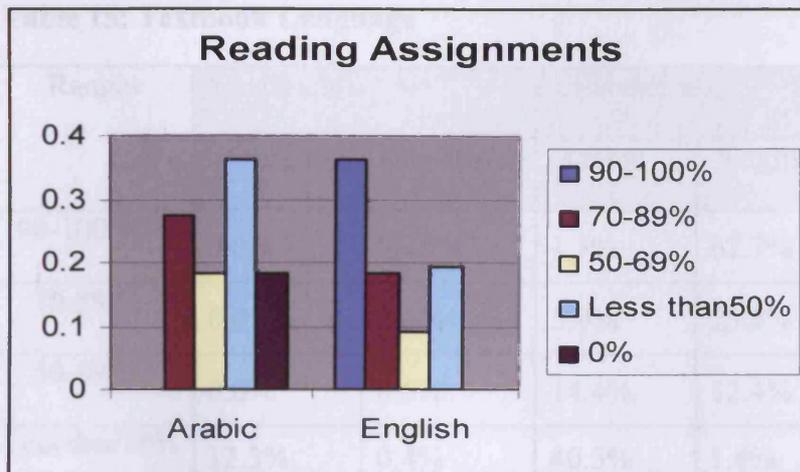
English was also reported to be the dominant language in reading assignment by Group C with the exception of Gezira Group where Arabic was also used nearly as much as English.(See Chart 4)

Chart 4: The Language of Reading Assignments Group C



When instructors were asked in question 4 of their questionnaire about the language of reading they assign for their students, they varied in their responses as the following chart shows:

Chart 5: The Language of Reading Assignments (Instructors)



Why were the students' reading assignments in English and why did instructors assign readings in English? The following section (5.2.2) may provide a partial answer while chapter 6 discusses this in further detail.

5.2.2 Textbook Language

Question 6: What percentages of your textbooks in your courses are in Arabic? English?

At the macro or universities level, Khartoum University showed that 96.6% of its participants claimed that more than 90% of their textbooks were in English. 87.7% reported not to have any textbooks in Arabic. However, 12.3% reported to have less than 50% of their textbooks in Arabic. This can be attributed to the limited courses offered in Arabic as for example Forensic Medicine given to the seniors in the college.

In comparison, the picture in Omdurman was different. 62.7% of the participants showed that more than 90% of their textbooks are in English. Nonetheless, 23.5 % considered not to be more than 90% but at the range of 70-89%. Participants were divided about textbooks in Arabic, 40.5% claimed to have less than 50% while 37.9% said they do not have any.

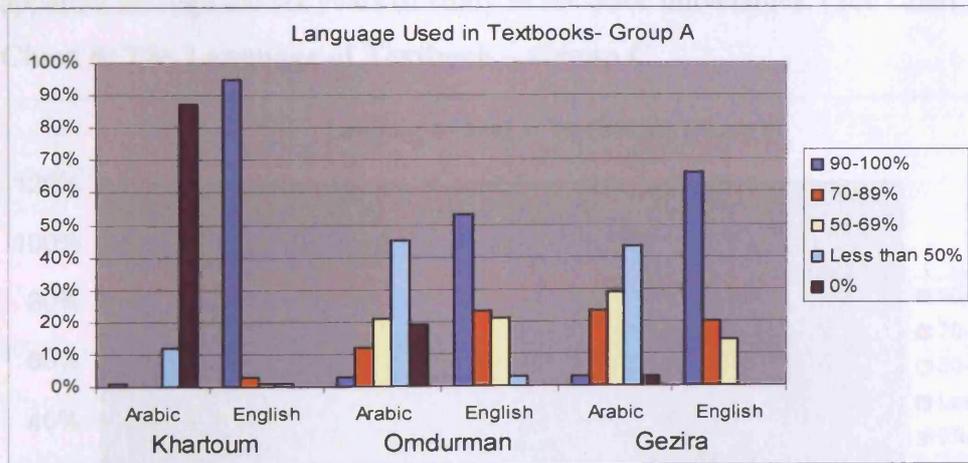
Similar to Omdurman, 60.8% of Gezira University responders claimed to have more than 90% of their textbooks in English, however, 23.5% did not agree to the 90% range and said it was 70-89%. Students were scattered in reporting about textbooks in Arabic as can be seen in Table 15.

Table 15: Textbook Language

Ranges	Khartoum		Omdurman		Gezira	
	Arabic	English	Arabic	English	Arabic	English
90-100 %	0.0%	96.6%	1.3%	62.7%	5.4%	60.8%
70-89 %	0.0%	2.5%	5.9%	23.5%	10.8%	23.5%
50-69 %	0.0%	0.5%	14.4%	12.4%	18.8%	7.6%
Less than 50%	12.3%	0.4%	40.5%	1.4%	41.9%	7.3%
0%	87.7%	0.0%	37.9%	0.0%	23.1%	0.8%

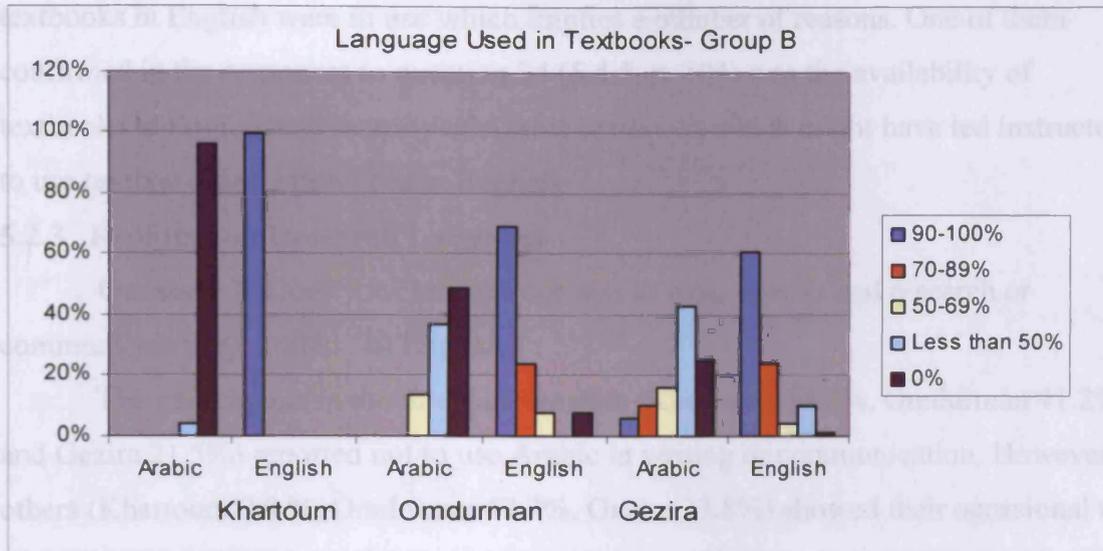
In considering data at the micro or group level, Group A in the three universities reported English to be the language used in textbooks. Group A of Omdurman and Gezira showed a considerable use of textbooks in Arabic while more than 80% of Khartoum Group A said not to have textbooks in Arabic. (See Chart 6)

Chart 6: The Language of Textbooks – Group A



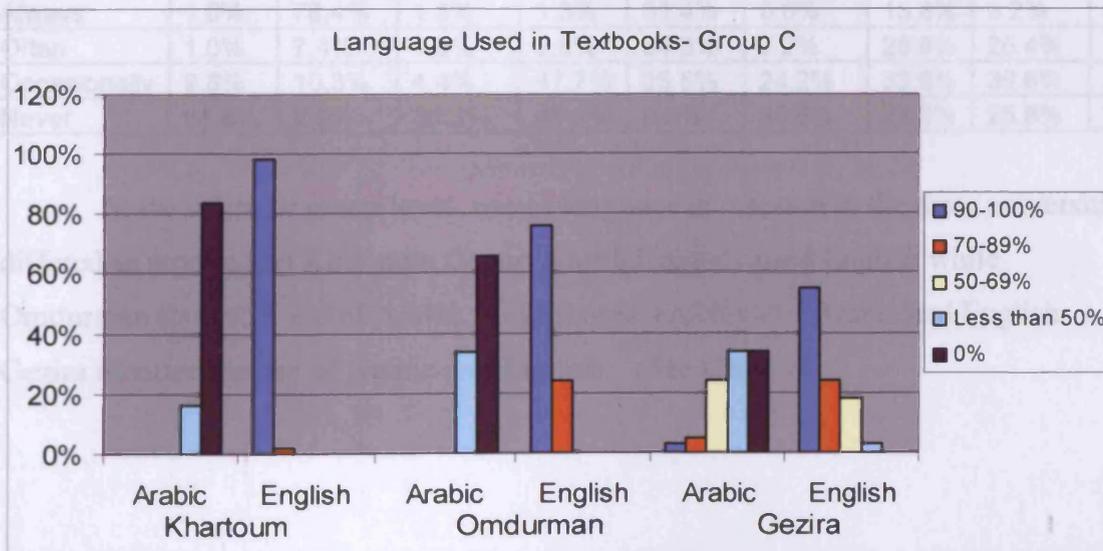
Group B of Khartoum was like Group A; however, Group B showed a decrease in the use of Arabic textbooks. Group B of Omdurman reported the use of textbooks in Arabic decreasing in third and fourth years. Gezira showed more use of Arabic textbooks than the other two universities. (See Chart 7)

Chart 7: The Language of Textbook- Group B



Group C of Khartoum was similar to Group A and B. It showed the use of some textbooks in Arabic which were due to courses given in Arabic. Use of Arabic textbooks stopped in the senior classes of Omdurman. Gezira continued to show the same pattern as in Group A and Group B. Dependency on English textbooks was apparent through the six years of study in the three universities. (See Chart 8)

Chart 8: The Language of Textbook – Group C



Almost half of the faculty members (45.5%) claimed that more than 90% of textbooks are in English. The rest of the faculty members reported different ranges.

Lecturers were expected to use textbooks in Arabic but the findings showed that textbooks in English were in use which implies a number of reasons. One of them confirmed in the responses to question 34 (5.4.5, p. 104) was the availability of textbooks in English and scarcity of Arabic textbooks which might have led instructors to use textbooks and references in English.

5.2.3 Reports and Research Language

Question 7: Does your lecturer ask you to write reports and research or communicate in a) Arabic b) English?

The participants in the three universities (Khartoum 84.8%, Omdurman 41.2% and Gezira 21.5%) reported not to use Arabic in writing or communication. However, others (Khartoum 9.8 %, Omdurman 47.7%, Gezira 33.8%) showed their occasional use of Arabic in writing.

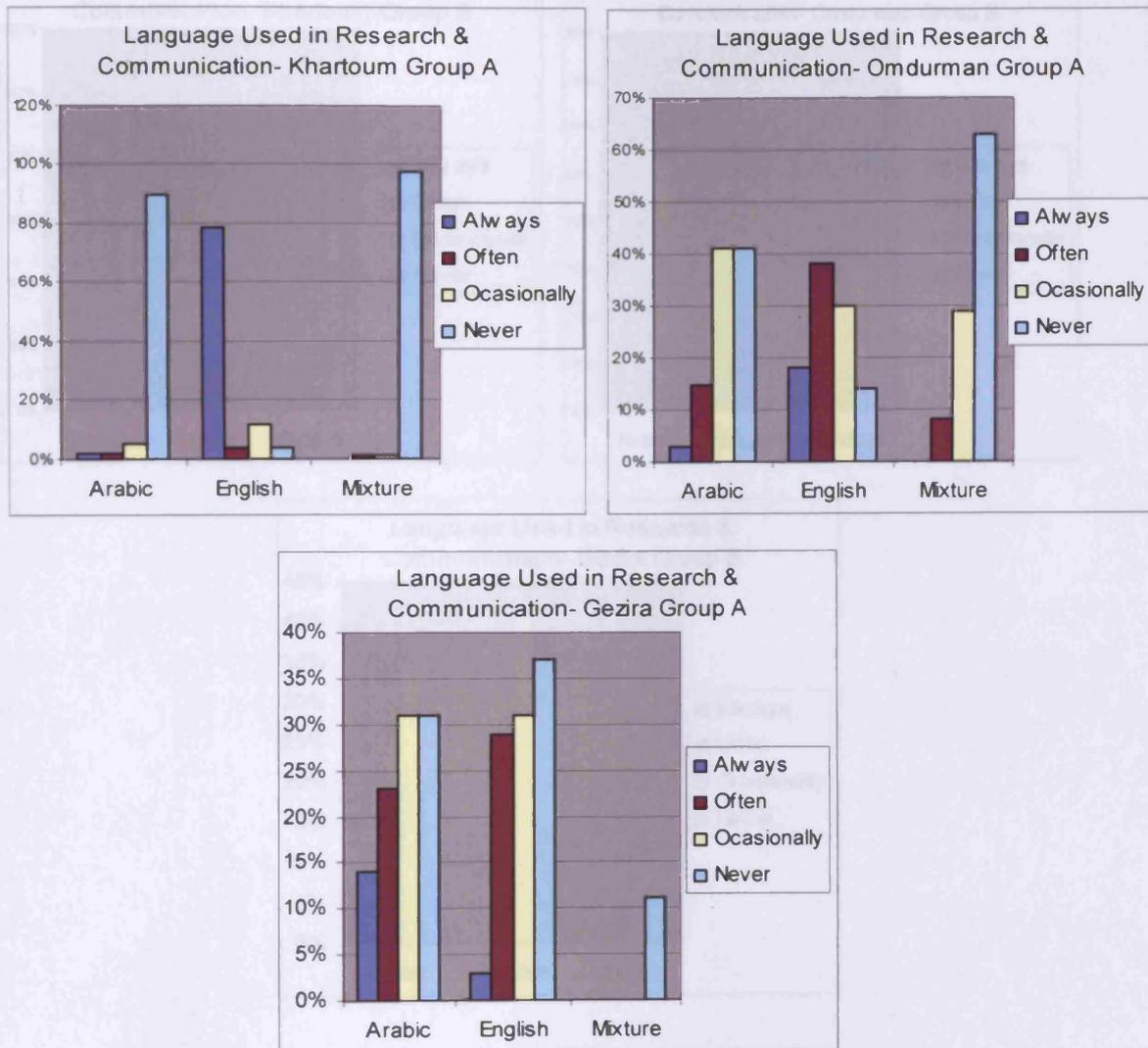
English was always used in writing in two universities (Khartoum 78.4% and Omdurman 31.4%) while Gezira participants claimed to often (25.4%) or occasionally (39.6%) use English in writing. Nonetheless, 25.8% of Gezira participants showed not to use English in writing.

Table16: Use of Language in Reports & Research in Medicine

Q7	Khartoum			Omdurman			Gezira		
	Arabic	English	Mixture	Arabic	English	Mixture	Arabic	English	Mixture
Always	1.0%	78.4%	1.5%	1.3%	31.4%	0.0%	15.8%	9.2%	4.2%
Often	1.0%	7.4%	1.5%	9.8%	34.0%	7.2%	28.8%	25.4%	3.8%
Occasionally	9.8%	10.3%	4.4%	47.7%	25.5%	24.2%	33.8%	39.6%	3.1%
Never	84.8%	2.9%	36.3%	41.2%	9.2%	68.6%	21.5%	25.8%	7.7%

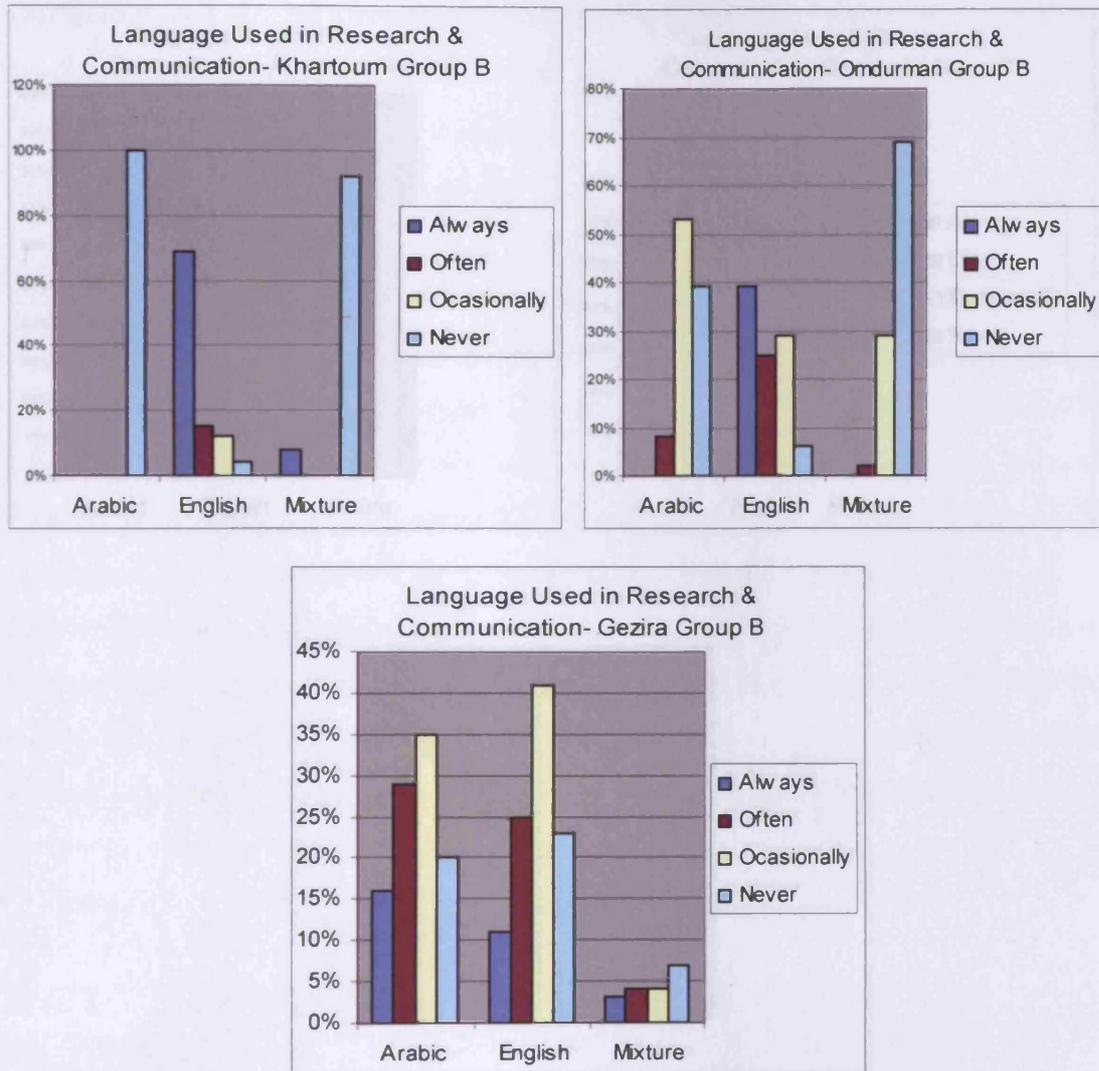
At the micro or group level, use of language in research in the three universities differed as reported by Khartoum Group A which mostly used English while Omdurman showed a use of Arabic, English and a mixture of Arabic and English. Gezira reported the use of Arabic and English. (See Chart 9)

Chart 9: The Language of Research, Report & Communication- Group A



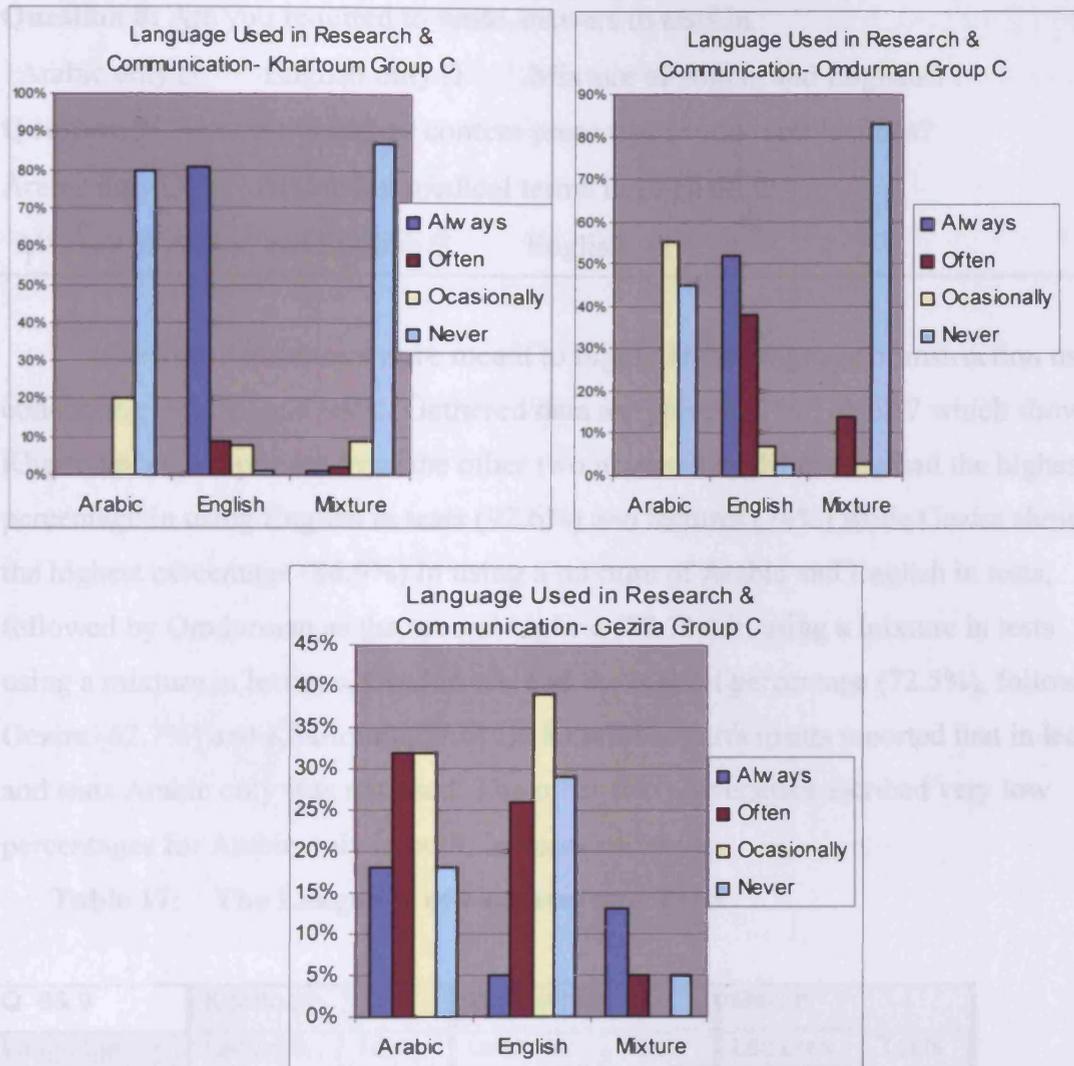
Group B of Khartoum did not differ from Group A. Group B of Omdurman showed an increase in the use of English. Group B of Gezira reported use of a mixture of Arabic and English. (See Chart 10)

Chart 10: The Language of Research, Report & Communication-Group B



The pattern of the participants' responses of Group C in the three universities also differed. The use of English in research in Khartoum and Omdurman continued while it decreased in Gezira as reflected in Chart 11. Instead, use of a mixture of Arabic and English in Gezira increased.

Chart 11: The Language of Research, Report & Communication –Group C



Instructors' responses were evenly distributed. They claimed to use Arabic and English equally in writing research and reports (always 27.3%, often 27.3%, occasionally 27.3% and never 27.3%).

The findings in this section shows that English was a dominant language in writing reports and research in Khartoum University while the other two universities, Omdurman and Gezira reported the use of English and Arabic in writing reports and research with different magnitude. This shows that Omdurman and Gezira were trying to implement arabicization in spite of the difficulties that force them sometimes to use English with Arabic.

5.2.4 Lectures and Tests

Question 8: Are you required to write answers to tests in

Arabic only English only Mixture of Arabic and English ?

Question 9: How is the course content presented in your oral lectures?

Arabic only Arabic but medical terms in English

Mixture of Arabic and English English

The above questions were meant to highlight the language of instruction used in conducting lectures and tests. Gathered data are presented in Table 17 which shows Khartoum as exceptional from the other two universities. Khartoum had the highest percentage in using English in tests (92.6%) and lectures (74%) while Gezira showed the highest percentage (86.9%) in using a mixture of Arabic and English in tests, followed by Omdurman as the second highest (79.7%) in using a mixture in tests. In using a mixture in lectures, Omdurman had the highest percentage (72.5%), followed by Gezira (62.7%) and Khartoum (27.5%). Khartoum participants reported that in lectures and tests Arabic only was not used. The other two universities ascribed very low percentages for Arabic only in both, lectures and tests.

Table 17: The Language of Lectures and Tests

Q. 8 & 9	Khartoum		Omdurman		Gezira	
	Lectures	Tests	Lectures	Tests	Lectures	Tests
Arabic	0.0%	0.0%	0.7%	4.6%	1.2%	8.1%
Terms in English	1.0%		11.1%		30.8%	
Mixture	27.5%	7.4%	72.5%	79.7%	62.7%	86.9%
English	74.0%	92.6%	15.7%	15.7%	5.4%	5.0%

At the micro or group level, Khartoum students of first and second years (Group A) said that they take tests in English only while some claimed the use of mixture. Group B (3rd & 4th) reported to use only English. Group C students (5th & 6th) were in line with Group A in taking tests in English and a Mixture.

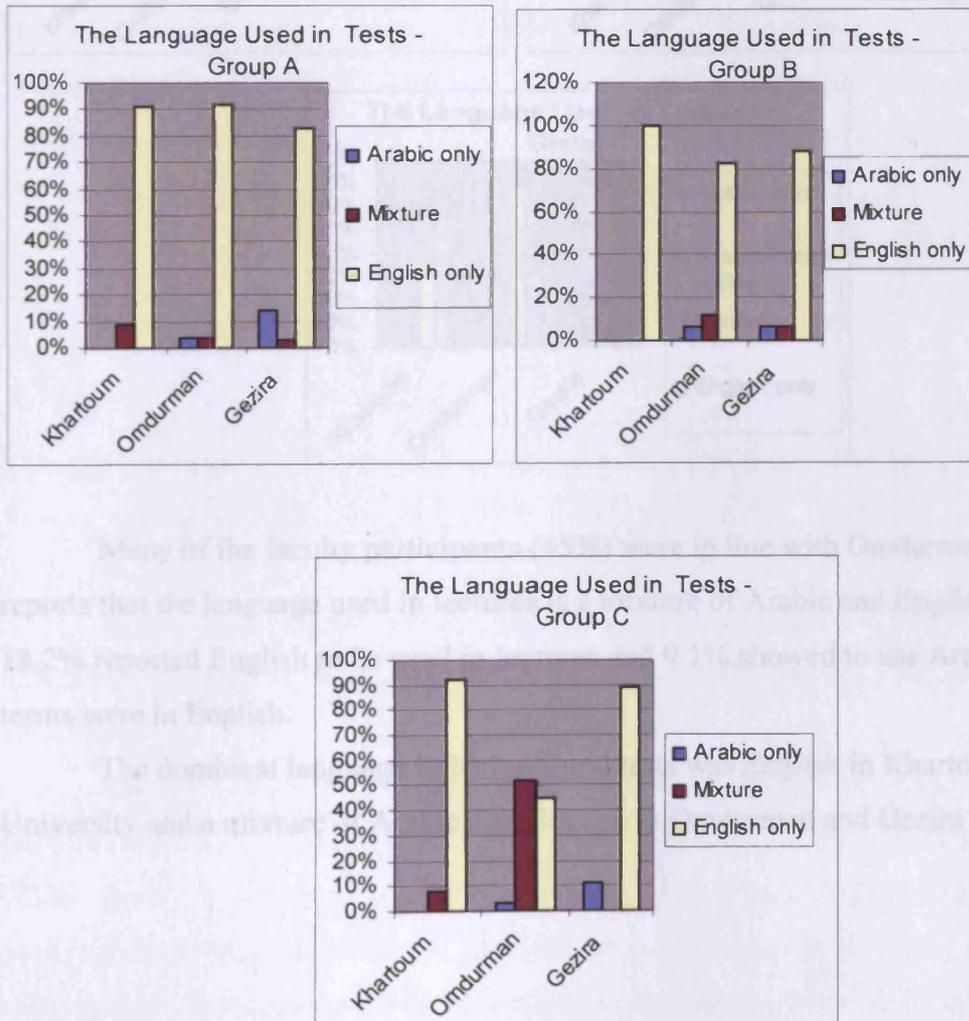
Khartoum groups were not different in reporting the language used in lectures. Group B and Group C reported that Arabic with terms in English was used in lecture delivery.

A personal communication with students at Khartoum Medical College showed that instructors differ in their delivery of the lectures. Some of them used English only while others used mixed English/Arabic with different weights in other words some of them used much English and little Arabic or vice versa.

Omdurman and Gezira groups reported that English was used in tests; nonetheless, few students claimed use of Arabic, English and a Mixture of both in tests. Group B in the three universities was similar to group A

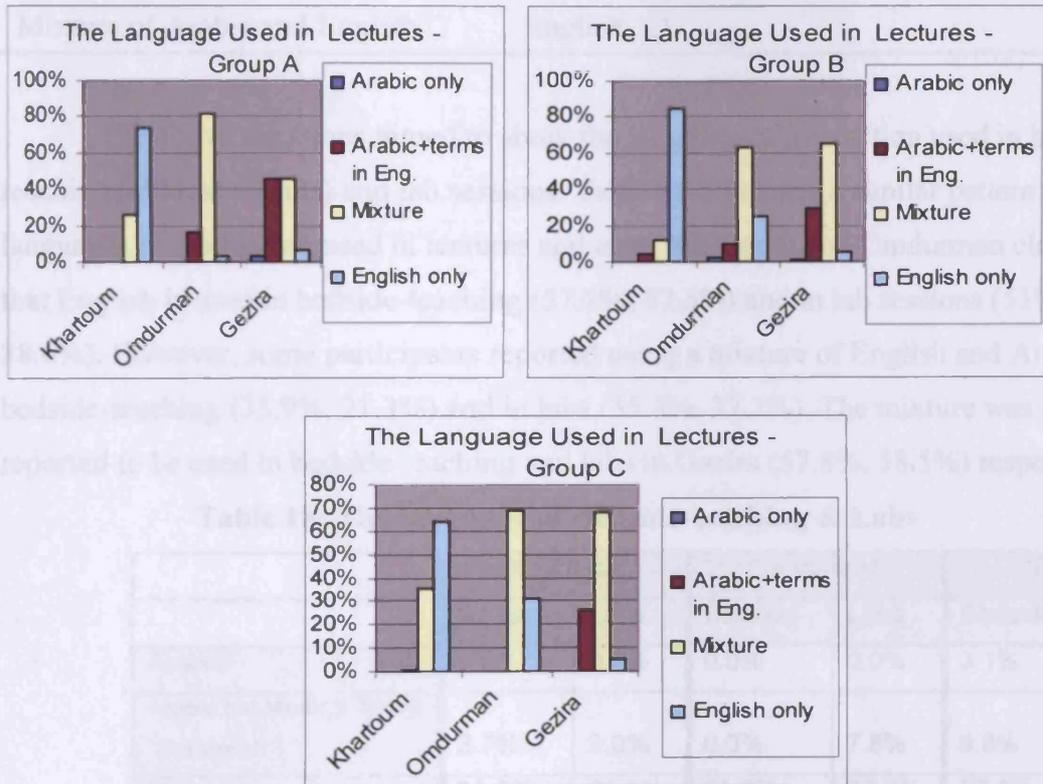
Group C of Khartoum and Gezira reported that English is used in tests. Omdurman showed more use of a Mixture than English in taking tests. Very little use of Arabic was reported by Omdurman and Gezira.

Chart 12: The Language Used in Tests



English was reported by all Khartoum groups to be the language used in lectures while Omdurman and Gezira showed a mixture of Arabic and English to be the dominant. None of the groups reported Arabic only to be used in lectures; nonetheless, they reported a limited use of Arabic accompanied by medical terms in English (See Chart 13).

Chart 13: The Language Used in Lectures



Many of the faculty participants (45%) were in line with Omdurman and Gezira reports that the language used in lectures is a mixture of Arabic and English. Only 18.2% reported English to be used in lectures and 9.1% showed to use Arabic but the terms were in English.

The dominant language in lectures and tests was English in Khartoum University and a mixture of Arabic and English in Omdurman and Gezira universities.

5.2.5 Bedside-teaching and Labs

Question 10. How do you receive bedside teaching (clinical sessions or rounds)?

Arabic only Arabic but medical terms in English

Mixture of Arabic and English English

Question 12. What language is used in your labs and clinical sessions &

rounds? Arabic only Arabic but medical terms in English

Mixture of Arabic and English English

The above questions aimed to show the language of instruction used in bedside-teaching (clinical rounds) and lab sessions. Table 18 illustrates a similar pattern to the languages of instruction used in lectures and tests. Khartoum and Omdurman claimed that English is used in bedside-teaching (57.1%, 62.5%) and in lab sessions (51%, 38.6%). However, some participants reported using a mixture of English and Arabic in bedside-teaching (33.9%, 21.3%) and in labs (35.3%, 37.3%). The mixture was also reported to be used in bedside-teaching and labs in Gezira (57.8%, 58.5%) respectively.

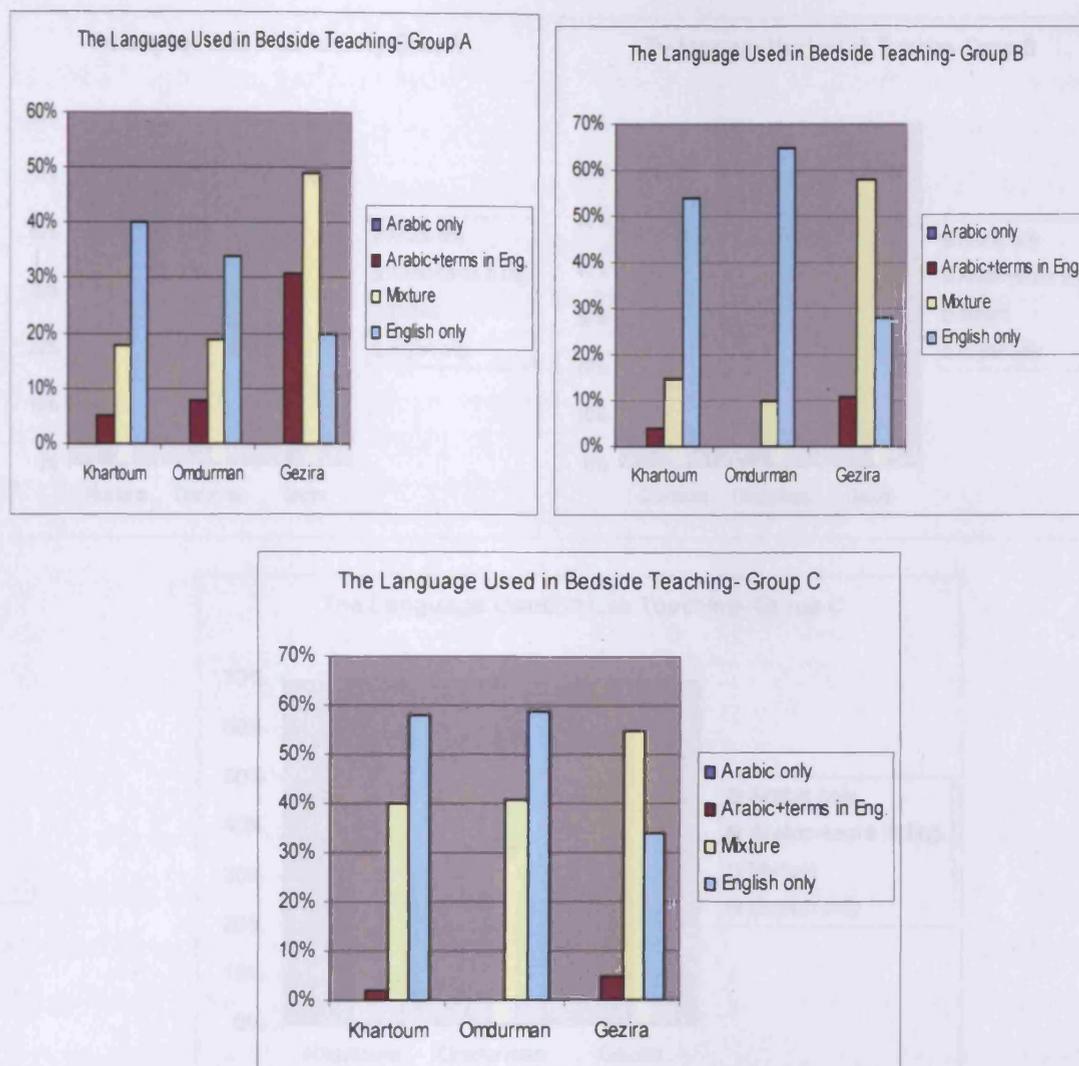
Table 18: The language of Bedside-teaching & Labs

	Khartoum		Omdurman		Gezira	
	Bedside	Labs	Bedside	Labs	Bedside	Labs
Arabic	0.0%	0.0%	0.0%	0.0%	3.1%	0.8%
Arabic but Medical Terms in English	2.7%	2.0%	0.0%	7.8%	9.8%	23.8%
Mixture	33.9%	35.3%	21.3%	37.3%	57.8%	58.5%
English	57.1%	51.0%	62.5%	38.6%	29.3%	16.9%

At the micro or group level, Group A was not considered in treating the data about bedside-teaching since Group A in the three universities does not receive this kind of training.

English was reported by Group B in Khartoum and Omdurman to be used in bedside-teaching. Different percentages of Group B in Gezira showed that Arabic only (71%), Arabic & Terms in English (61%), a Mixture (74%) and English (73%) were used in bedside teaching. Group C in Khartoum and Omdurman reported that a Mixture of Arabic and English was the most used in the bedside teaching while in Gezira the most used was Arabic only.

Chart 14: The Language of Bedside-teaching (Group)

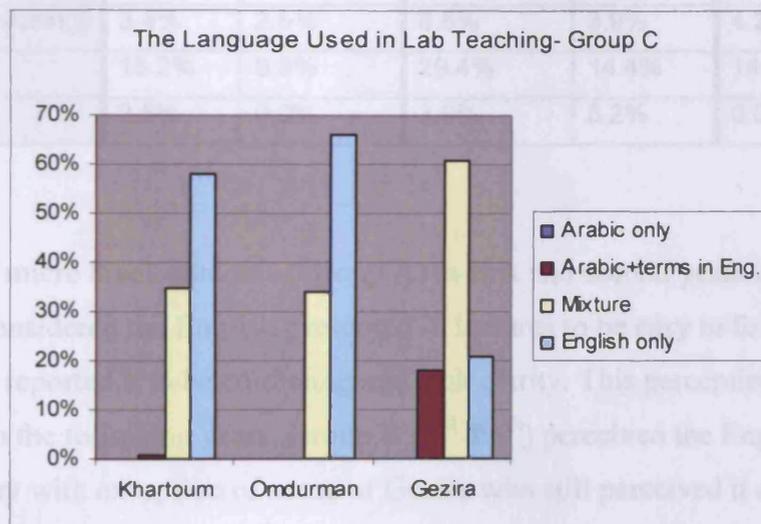
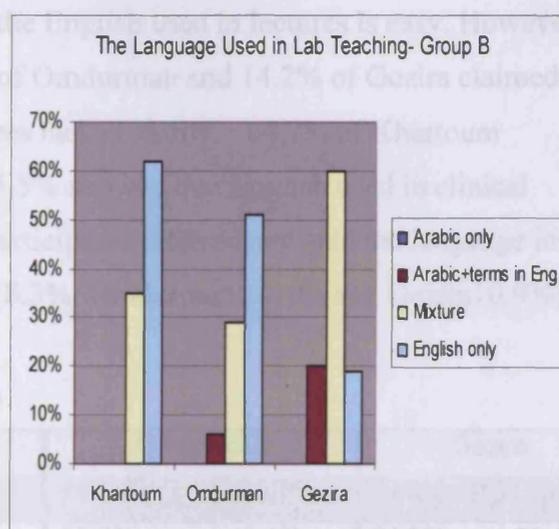
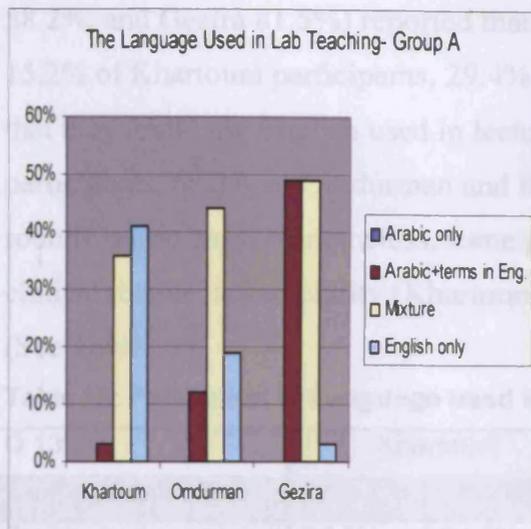


Group A of Khartoum reported the use of English in labs; nonetheless, an almost equal percentage said they used a Mixture of Arabic and English. A Mixture of Arabic and English was the language reported to be used in labs in Omdurman and Gezira. However, Omdurman showed a limited use of English and Arabic accompanied with terms in English while Gezira reported an equal use of Arabic with terms in English and very limited use of English.

Group B in Khartoum and Omdurman showed a dominance of English in labs; nonetheless, a Mixture was reported to be used in the two universities. Group B of Gezira reported the dominance of a Mixture of Arabic and English; however, some showed the use of English and Arabic accompanied with terms in English.

Group C in the three universities was almost identical to Group B.

Chart 15: The Language Used in Labs (Groups in Universities)



The pattern of faculty members' responses was not different from what students have reported. 36.4% used mixture while other participants (18.2%) used Arabic with terms in English. 9.1% of the participants used English only in bedside-teaching.

The findings in this section show that Khartoum used English most frequently in bedside-teaching and labs while there was more Arabic in Omdurman besides English. In Gezira much Arabic was used in bedside-teaching and labs besides English.

5.2.6 Perception of English as the Language of Instruction

Question 13: What do you think of the language used in

- a) lectures b) clinical rounds?

easy to follow ambiguous lack clarity difficult

The above question aimed to explore whether participants see the language used in lectures and clinical rounds easy to follow, confusing, lack clarity or

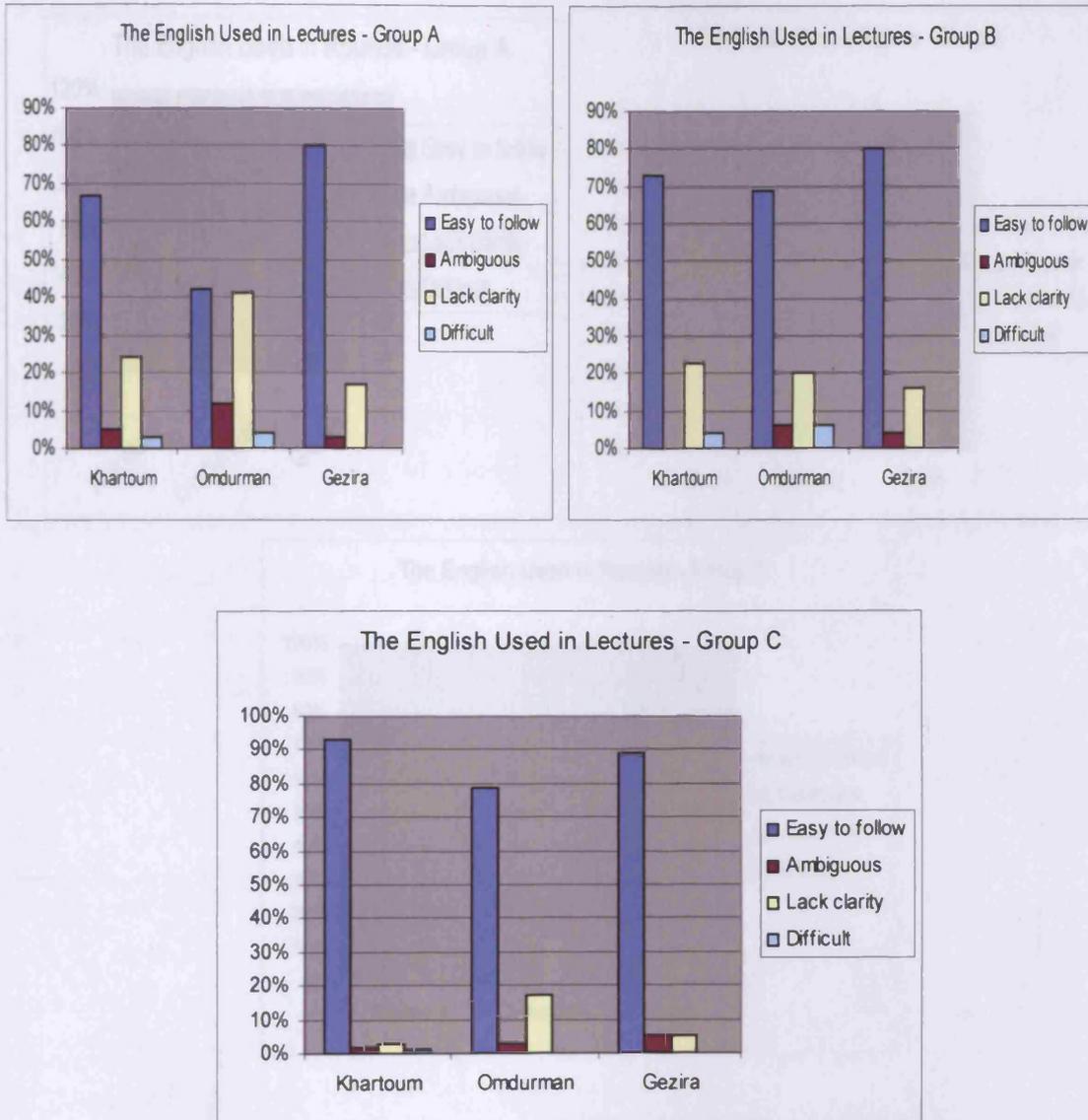
difficult. Most of the participants in the three universities (Khartoum 78.9%, Omdurman 58.2%, and Gezira 81.5%) reported that the English used in lectures is easy. However, 15.2% of Khartoum participants, 29.4% of Omdurman and 14.2% of Gezira claimed that they found the English used in lectures lacked clarity. 64.7% of Khartoum participants, 58.2% of Omdurman and 81.5% showed that English used in clinical rounds is also easy. Nonetheless, some participants differed and said the language in clinical rounds lacked clarity (Khartoum 8.3%, Omdurman 14.4% and Gezira 10.9%) (See Table 19).

Table 19: Perception of Language used in

Q 13	Khartoum		Omdurman		Gezira	
	Lectures	Rounds	Lectures	Rounds	Lectures	Rounds
Easy	78.9%	64.7%	58.2%	43.1%	81.5%	83.1%
Ambiguous(confusing)	3.4%	2.5%	8.5%	3.9%	4.2%	5.0%
Lack clarity	15.2%	8.3%	29.4%	14.4%	14.2%	10.7%
Difficult	2.5%	0.0%	3.9%	5.2%	0.0%	1.2%

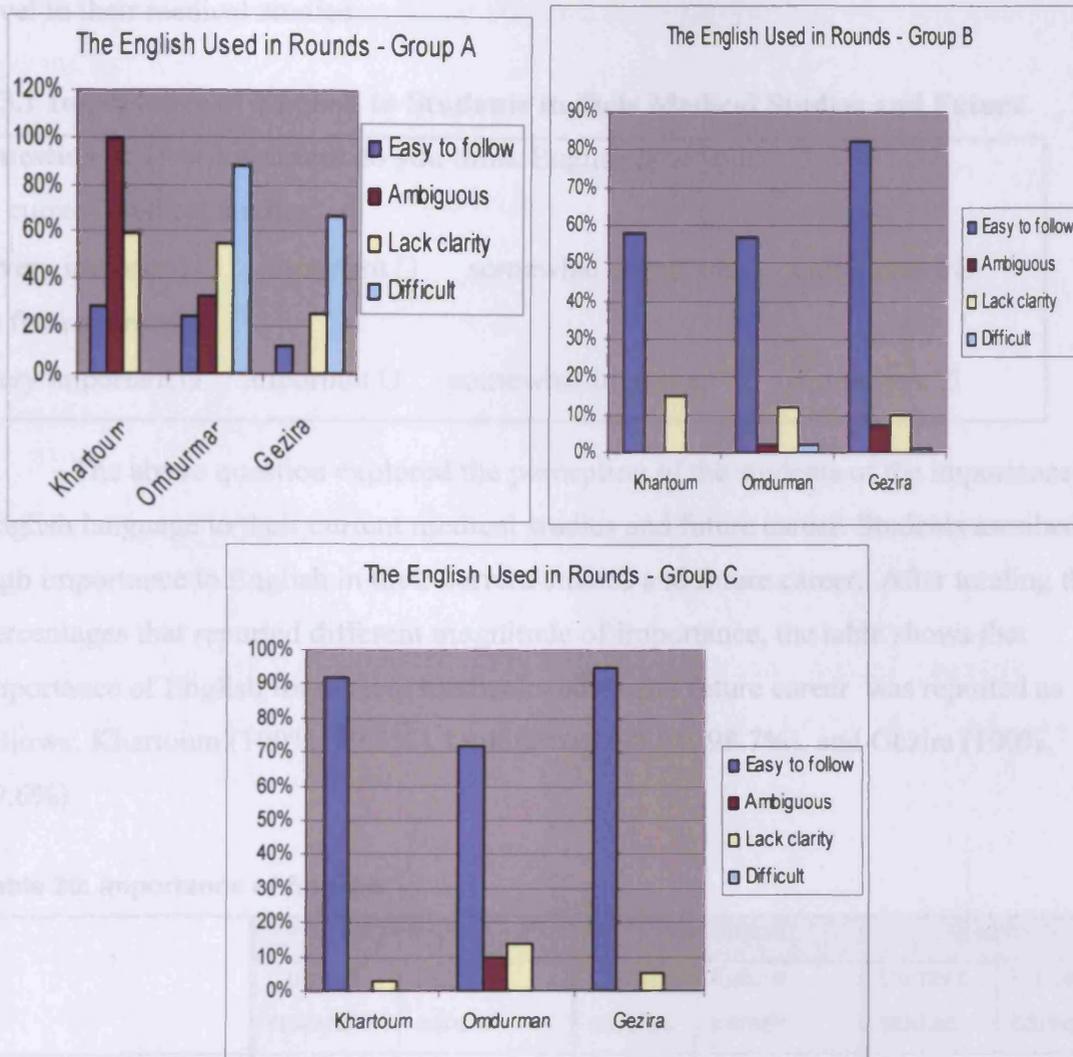
At the micro level, students (Group A) in first and second years in the three universities considered the English presented in lectures to be easy to follow, however, some of them reported it to be confusing and lack clarity. This perception gradually disappeared in the following years. Group B (3rd & 4th) perceived the English in the lectures as easy with exception of some of Gezira who still perceived it as confusing and lack clarity. Group C (5th & 6th) clearly stated that the English of lectures was easy. This gradual change in the students' perception of English used in lectures may be due to the extended exposure to the language (See Chart 17)

Chart 16: The English of lectures (Groups)



Students in first and second years (Group A) in the three universities do not have clinical rounds. Data was confined to Group B and C. Students showed that the English used in clinical rounds was easy except some of Group C who reported it to be confusing.

Chart 17: The English of Clinical Rounds (Groups)



Instructors responded confirming that English of lectures (81.8%) and clinical rounds (54.5%) is easy as students reported. However, 9.1% reported that some students perceive the language of lectures as lacking clarity and this also is in line with what students claimed.

5.3 Students' Readiness to receive medical studies in English.

Questions 3, 15, 17, 18 surveyed the readiness of the students to use the English skills they had learnt in high school in their medical studies. Question 3 probed into the students' feelings of the importance of English to their medical studies and future career and thus explored their psychological readiness to use English in medical studies. Then, question 15 looked into whether students consider their high school English to be beneficial to their current medical studies in English while question 17 and 18

investigated students' perceptions of the relevance of the English offered at the college level to their medical studies.

5.3.1 Importance of English to Students in their Medical Studies and Future

Question 3: How important do you think English is to your

a) current medical studies

very important important somewhat important unimportant

b) future career?

very important important somewhat important unimportant

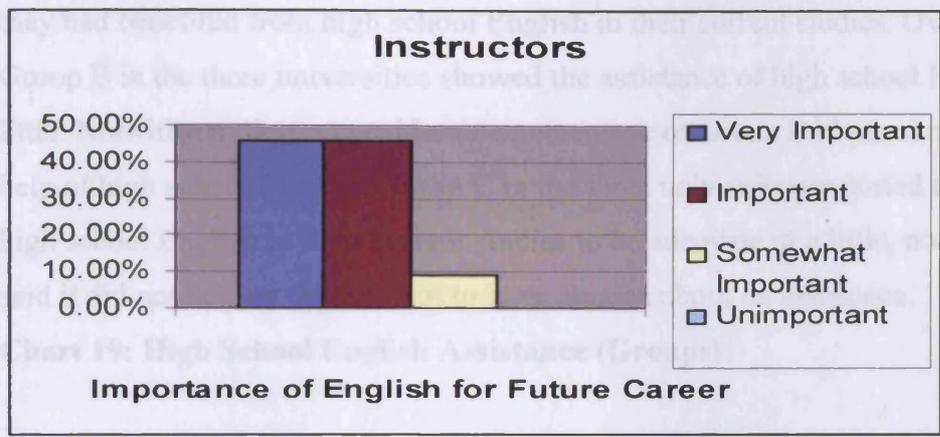
The above question explored the perception of the students of the importance of English language to their current medical studies and future career. Students ascribed high importance to English in their current studies and future career. After totaling the percentages that reported different magnitude of importance, the table shows that importance of English for current medical studies and future career was reported as follows: Khartoum (100%, 99.5%), Omdurman (98.7%,98.7%), and Gezira (100%, 99.6%)

Table 20: Importance of English

	Khartoum		Omdurman		Gezira	
	Current studies	Future career	Current studies	Future career	Current studies	Future career
Very important	75.5%	80.9%	54.2%	75.2%	70.0%	82.7%
Important	21.1%	14.7%	37.9%	18.3%	25.4%	15.0%
Somewhat important	3.4%	3.9%	6.5%	5.2%	4.6%	1.9%
Important (Total)	100%	99.5%	98.7%	98.7%	100%	99.6%
Unimportant	0.0%	0.5%	1.3%	1.3%	0.0%	0.4%

Instructors reported that English is very important for their students' future career. (See chart 19)

Chart 18: Importance of English for Future Career (Instructors)



5.3.2 Has Higher School English Assisted Students in their Medical Studies?

Question 15: Does the English you had in high school helped you to understand lectures and clinical rounds if they are given in English only?

yes a little not at all I don't know

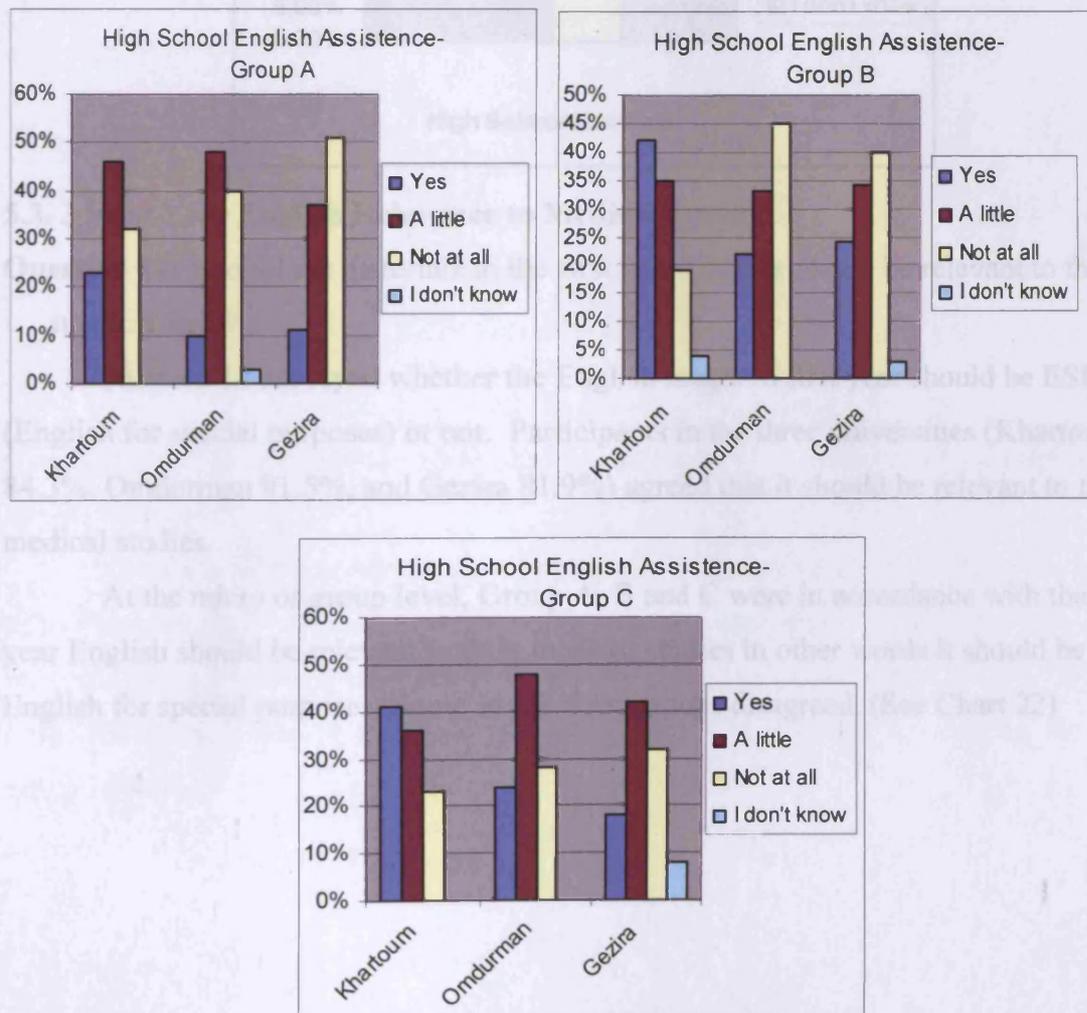
When participants were asked in the above question whether the English they had in high school qualified them to follow instructions in English, their responses reflected a concern about its assistance. A noticeable percentage in the three universities reported that high school English did not have any role in their current medical studies (Khartoum 26.5%, Omdurman 39.2 %, and Gezira 40%). Nonetheless, a group from the universities (Khartoum 32.8%, Omdurman 16.3%, and Gezira 21.2%) reported that high school English to be of a help to them while others (Khartoum 40.2%, Omdurman 43.1%, and Gezira 35.4%) attributed little assistance to it. (See Table 21)

Table 21: High school English Help in Current Studies

Q 15	Khartoum	Omdurman	Gezira
Yes	32.8%	16.3%	21.2%
A little	40.2%	43.1%	35.4%
Not at All	26.5%	39.2%	40.0%
I don't Know	0.5%	1.3%	3.5%

At the micro or group level, lower percentage of Group A accorded high school English a role in assisting them understanding the English used at the university level. High percentage of Group A in the three universities reported a little or not at all role. Group B in the three universities reported higher percentage than Group A stating that they had benefited from high school English in their current studies. Over 30% of Group B in the three universities showed the assistance of high school English to be a little. Notwithstanding, a considerable percentage of Group B claimed not to see any help of high school English. Group C in the three universities reported the assistance of high school English in their current studies to be adequate or a little, nonetheless, some said it did not help or claimed not to have an idea about its assistance.

Chart 19: High School English Assistance (Groups)

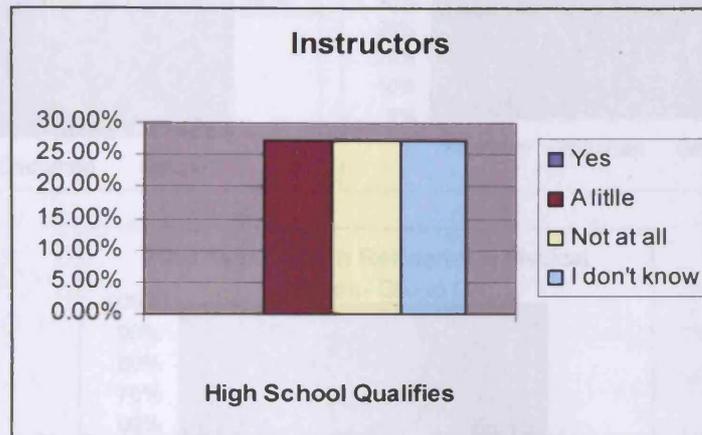


Instructors as the chart below reflects were in line with the two groups of students, those who claimed that high school English had not any role of assistance in their current studies, and those who attributed little assistance to it. However, some

instructors claimed to have no opinion about whether it is beneficial or not. (See Chart 21)

Such attitude was expected from students who experienced the implementation of arabicization in high school and thus the deterioration of English mentioned in Chapter Two of this study.

Chart 20: High School English Assistance (Instructors)



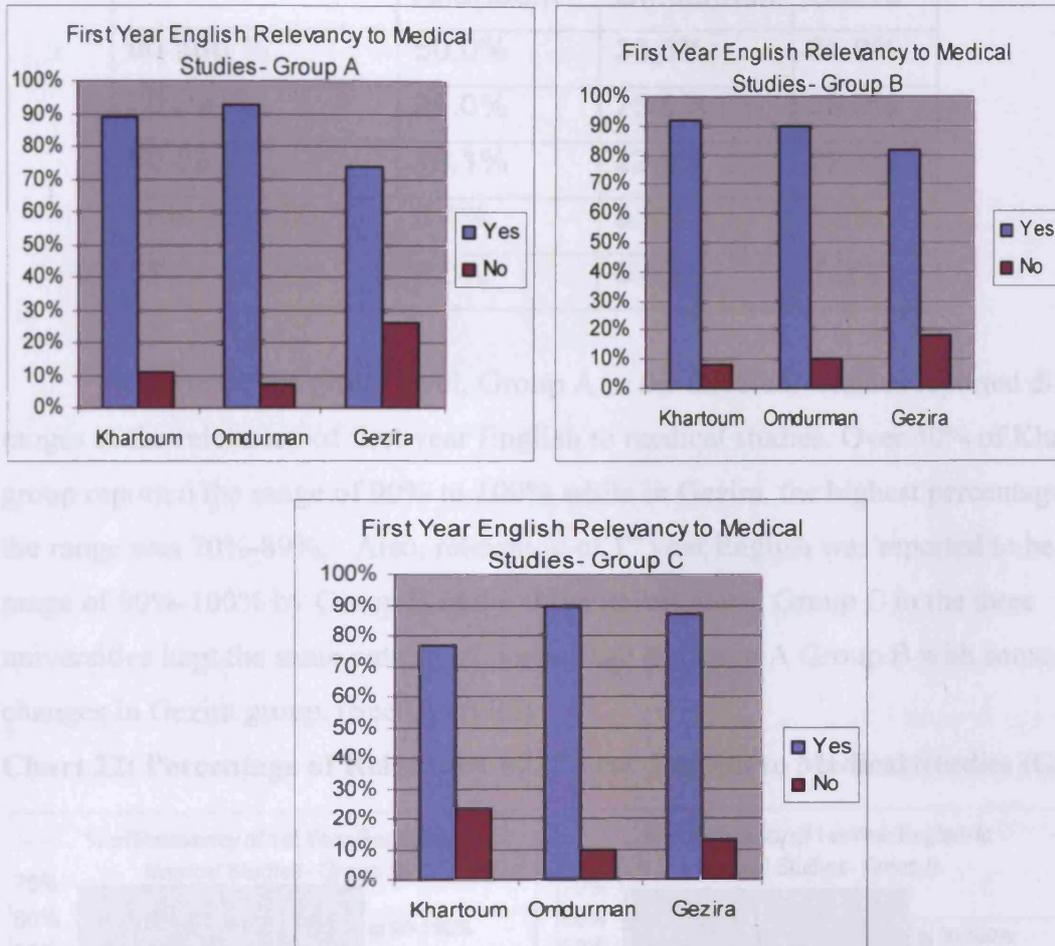
5.3. 3 First Year English Relevance to Medical Studies

Question 17: Should the materials in the first year English course be relevant to the medical field?

Question 17 surveyed whether the English taught in first year should be ESP (English for special purposes) or not. Participants in the three universities (Khartoum 84.3%, Omdurman 91.5%, and Gezira 81.9%) agreed that it should be relevant to their medical studies.

At the micro or group level, Group A, B and C were in accordance with that first year English should be relevant to their medical studies in other words it should be English for special purposes. Some in the three groups disagreed. (See Chart 22)

Chart 21: English Relevancy to Medical Studies (Groups)



Question 18: What percentage of English materials in the course should be relevant to the medical field?

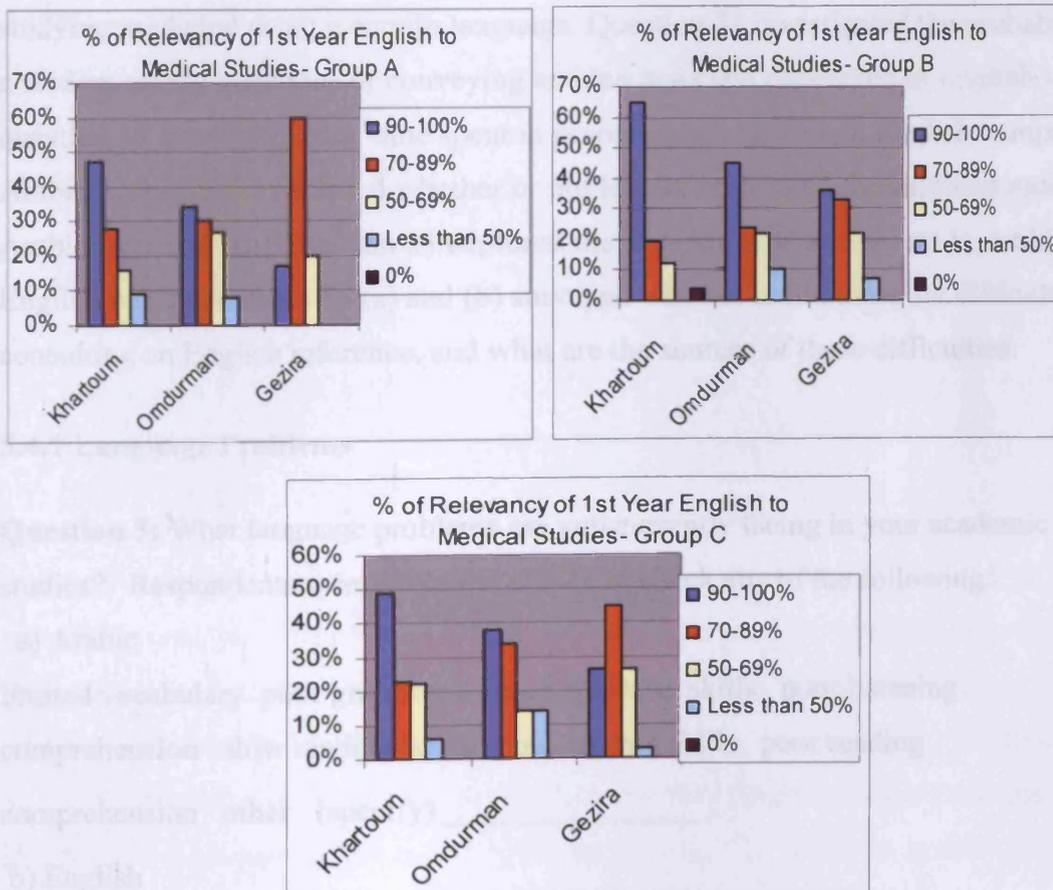
Question 18 which was a complement to question 17 looked into the percentage of medical specialty in the ESP course. The highest percentages in the universities as reflected in the following table were: Khartoum (50%) and Omdurman (38.6%) for the range 90-100%. However, Gezira highest percentage (38.5%) was reported for the range 70-89%.

Table 22: Relevance of First Year English to Medical Studies

Ranges	Khartoum	Omdurman	Gezira
90-100 %	50.0%	38.6%	31.9%
70-89 %	25.0%	28.8%	38.5%
50-69 %	18.1%	22.9%	22.7%
Less than 50 %	6.4%	9.8%	5.8%
0%	0.5%	0.0%	1.2%

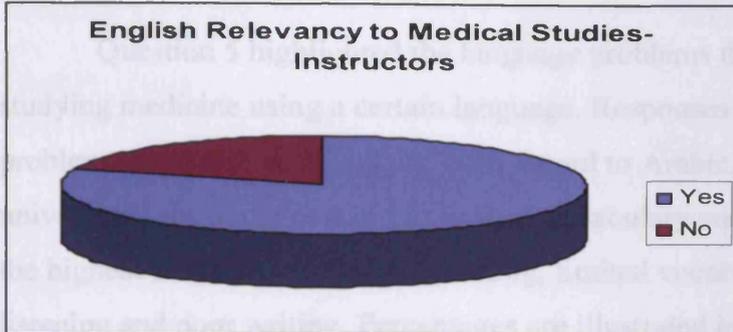
At the micro or group level, Group A in the three universities reported different ranges to the relevancy of first year English to medical studies. Over 40% of Khartoum group reported the range of 90% to 100% while in Gezira, the highest percentage said the range was 70%-89%. Also, relevancy of 1st year English was reported to be at the range of 90%-100% by Group B in the three universities. Group C in the three universities kept the same pattern of percentage as Group A Group B with some changes in Gezira group. (See Chart 23)

Chart 22: Percentage of Relevancy of 1st year English to Medical Studies (Groups)



Instructors were in line with the students and reported that freshmen English course should be relevant to the medical studies.

Chart 24: English Relevancy to Medical Studies (Instructors)



5.4 What are the Difficulties the Students Face?

The difficulties were anticipated to be: language problems, difficulties in asking and taking notes in English in class, scarcity of references and resources, difficulties in consulting English references. Questions 5, 31, 32,33,34,35 of the survey, which are given under their respective subsections, aimed to gather data about the anticipated difficulties. Question 5 highlighted the language problems that students encounter in studying medicine using a certain language. Question 31 investigated the probability of a student asking questions or conveying an idea in a class conducted in English while question 32 asked about the time spent in preparing or studying in English compared to Arabic. Question 33 explored whether or not lecture notes could be captured more in Arabic than English. Question 34 explored the availability of references in Arabic and English while questions 35 (a) and (b) surveyed whether or not there are difficulties in consulting an English reference, and what are the sources of these difficulties.

5.4.1 Language Problems

Question 5: What language problems are you currently facing in your academic studies? Respondents were given the choice to check any of the following:

- a) Arabic
- limited vocabulary
 - poor grammar
 - poor speaking skills
 - poor listening comprehension
 - slow reading speed
 - poor writing skills
 - poor reading comprehension
 - other (specify) _____ .

b) English

limited vocabulary poor grammar poor speaking skills poor listening comprehension
 slow reading speed poor writing skills poor reading comprehension other
 (specify)_____ .

Question 5 highlighted the language problems that students encounter in studying medicine using a certain language. Responses were gathered about the problems in Arabic and English. With regard to Arabic, the respondents from the three universities showed a concern in limited vocabulary and poor grammar and in English; the highest concerns were poor speaking, limited vocabulary, slow reading, poor listening and poor writing. Percentages are illustrated in the tables below.

Table 23: Arabic Deficiencies:

Deficiency	Khartoum	Omdurman	Gezira
Limited vocabulary	33.3%	60.8%	51.4%
Poor grammar	13.7%	11.1%	14.2%

Table 24: English Deficiencies:

Deficiency	Khartoum	Omdurman	Gezira
Poor speaking	46.1%	47.7%	33.5%
Limited vocabulary	36.3%	32%	26.9%
Slow reading	23.5%	24.8%	20.4%
Poor listening Comprehension.	14.7%	13.1%	16.9%
Poor writing	15.7%	9.8%	5.8%

Data in this section, for the sake of brevity, was treated at the university level only. Based on the data shown in the above tables, respondents reported very few deficiencies in Arabic which credits the use of Arabic as a language of instruction because it has very few language problems as reported in comparison to English.

Instructors saw Arabic as less problematic than English for the students and they reported the language problems in English as follows: (72.7%) poor speaking skills,

(54.5%) limited vocabulary, (36.4%) poor grammar, (36.4%) slow reading speed, (27.3%) poor writing skill, (18.2%) poor reading comprehension

5.4.2 Students Asking, and Conveying Ideas in English in Class

Question 31: I am less likely to ask questions or convey an idea if the instructor uses only English.

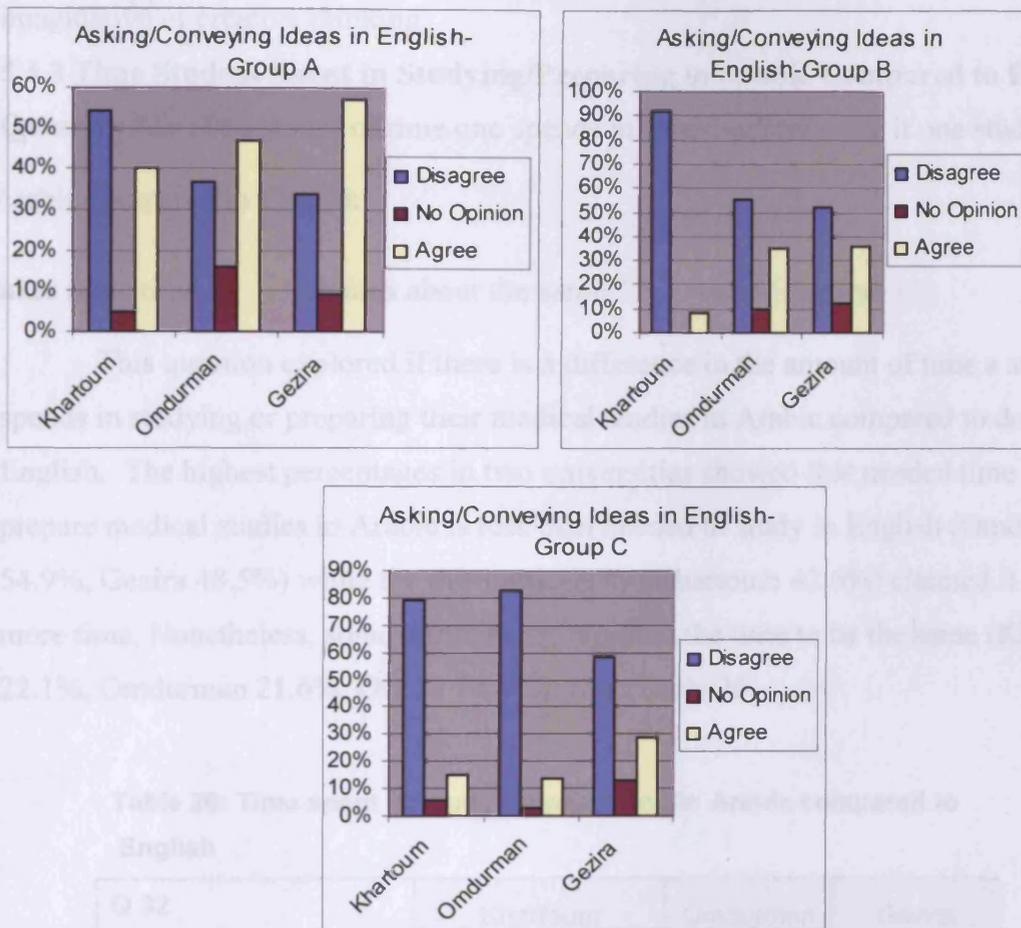
The above question targeted to elicit students' opinion on the assumption that they are less likely to ask questions or convey ideas if the language of instruction is English. The highest percentages in the three universities (Khartoum 71.6%, Omdurman 51.7%, and Gezira 50.8%) reported disagreement with this assumption. Nonetheless, some agreed with the assumption (Khartoum 22.1%, Omdurman 36.6%, Gezira 37.7%) while others showed no opinion (Khartoum 6.4%, Omdurman 11.8%, Gezira 11.5%). (See Table 25)

Table 25: I am Less Likely to Ask and Convey Ideas in English

	Khartoum	Omdurman	Gezira
Strongly Disagree	25.5%	20.3%	17.3%
Disagree	46.1%	31.4%	33.5%
Total Disagreement	71.6%	51.7%	50.8%
No opinion	6.4%	11.8%	11.5%
Agree	17.2%	29.4%	30.4%
Strongly Agree	4.9%	7.2%	7.3%
Total Agreement	22.1%	36.6%	37.7%

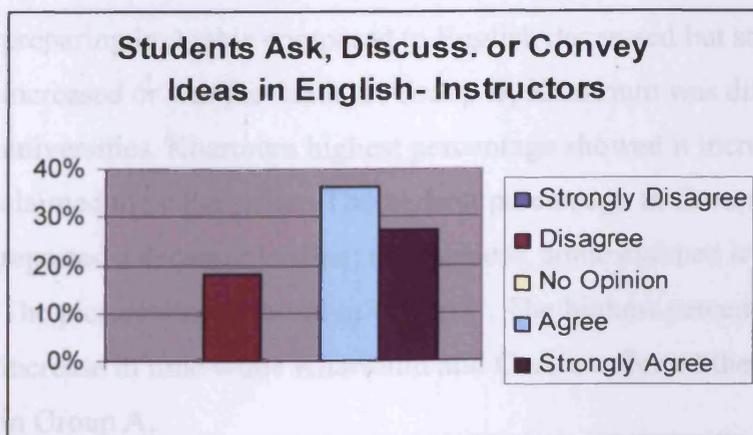
At the micro or group level, Group A of Khartoum disagreed and claimed that they can easily ask and convey ideas in English but some of them said they can not. Group A in Omdurman and Gezira universities showed that they were less likely to ask or convey an idea in English; nonetheless, many disagreed while others claimed not to have an idea.

Chart 24: Students are less likely to Ask, Discuss, or Convey Ideas in English (Groups)



Instructors' data agreed with Omdurman and Gezira data that students are less likely to ask questions, discuss or convey an idea in English in class (See Chart 26)

Chart 25: Students are less likely to Ask, Discuss, or Convey Ideas in English (Instructors)



High competency in a foreign language may allow one to think in the context of the foreign language but with a limited ability. It is just native language that offers a mighty and indispensable support to the ability to convey ideas, capacity for imaginative or creative thinking.

5.4.3 Time Student Spent in Studying/Preparing in Arabic Compared to English.

Question 32: The amount of time one spends in studying/preparing if one studies in Arabic compared to English

takes more time remains about the same takes less time

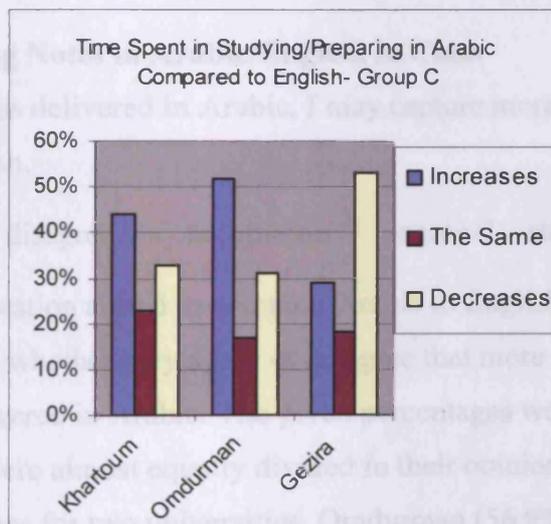
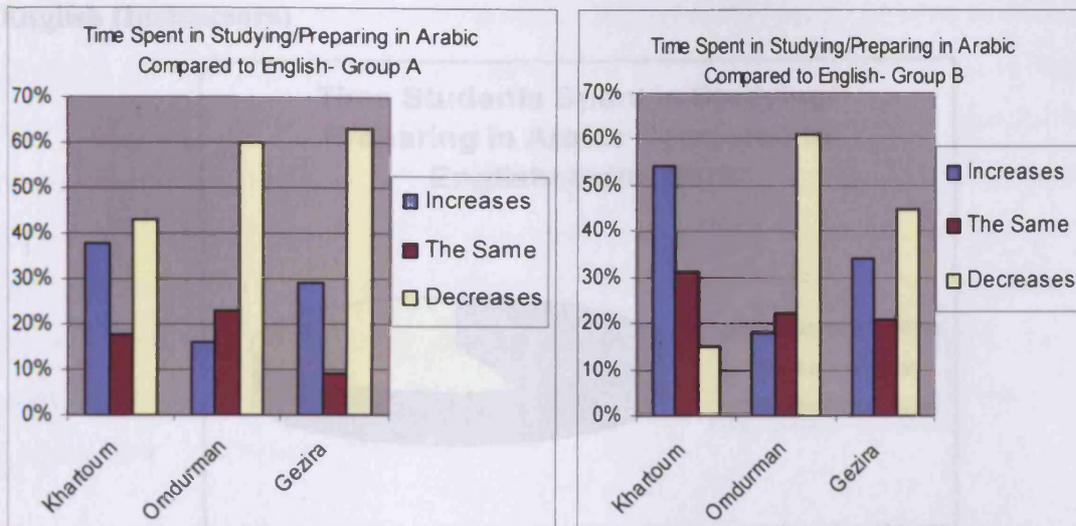
This question explored if there is a difference in the amount of time a student spends in studying or preparing their medical studies in Arabic compared to doing it in English. The highest percentages in two universities showed that needed time to study/prepare medical studies in Arabic is less than needed to study in English (Omdurman 54.9%, Gezira 48.5%) while the third university (Khartoum 42.6%) claimed it needs more time. Nonetheless, some participants reported the time to be the same (Khartoum 22.1%, Omdurman 21.6%, Gezira 18.8%). (See Table 26)

Table 26: Time spent in studying/preparing in Arabic compared to English

Q 32	Khartoum	Omdurman	Gezira
Needs more time	42.6%	23.5%	32.7%
The same	22.1%	21.6%	18.8%
Needs Less time	35.3%	54.9%	48.5%

Group A in the three universities reported the time spent in studying or preparing in Arabic compared to English decreased but some of the participants said it increased or was the same. In Group B, Khartoum was different from the other two universities. Khartoum highest percentage showed it increased and the second highest claimed to be the same. The highest percentage in Group B of Omdurman and Gezira reported a decrease in time; nonetheless, some claimed it to be the same or increased. The picture was different in Group C. The highest percentage in Omdurman showed an increase in time while Khartoum and Gezira reflected the same percentage as they were in Group A.

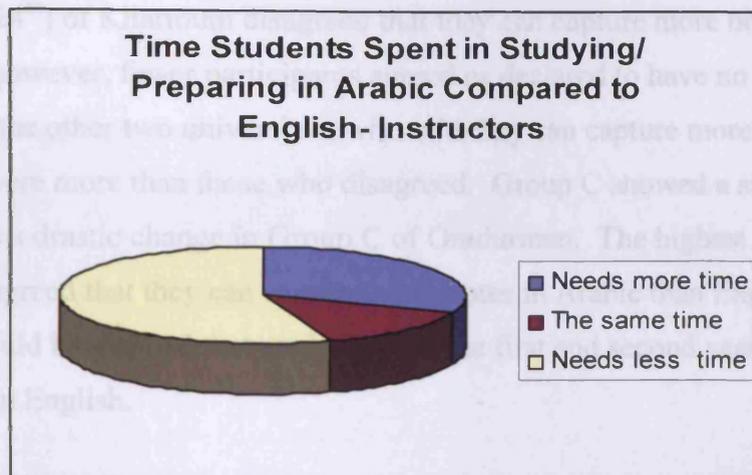
Chart 26: Time Spent in Studying /Preparing (Groups)



Instructors showed that the amount of time a student needs to spend in studying/preparing his/her medical studies in Arabic is less compared to the time to do that in English. Thus, they were in line with Omdurman and Gezira participants. (See Chart 28)

	Khartoum	Omdurman	Gezira
Strongly Disagree	22.5%	12.1%	8.5%
Disagree	30.4%	18.3%	41.2%
Agree	27.0%	42.5%	34.2%
Strongly Agree	8.0%	14.4%	14.8%

Chart 27: Time Students Spent Studying/Preparing in Arabic Compared to English (Instructors)



5.4.4 Students Taking Notes in Arabic/English in Class

Question 33: In a class delivered in Arabic, I may capture more lecture notes than when the class is in English.

strongly disagree disagree no opinion agree strongly agree

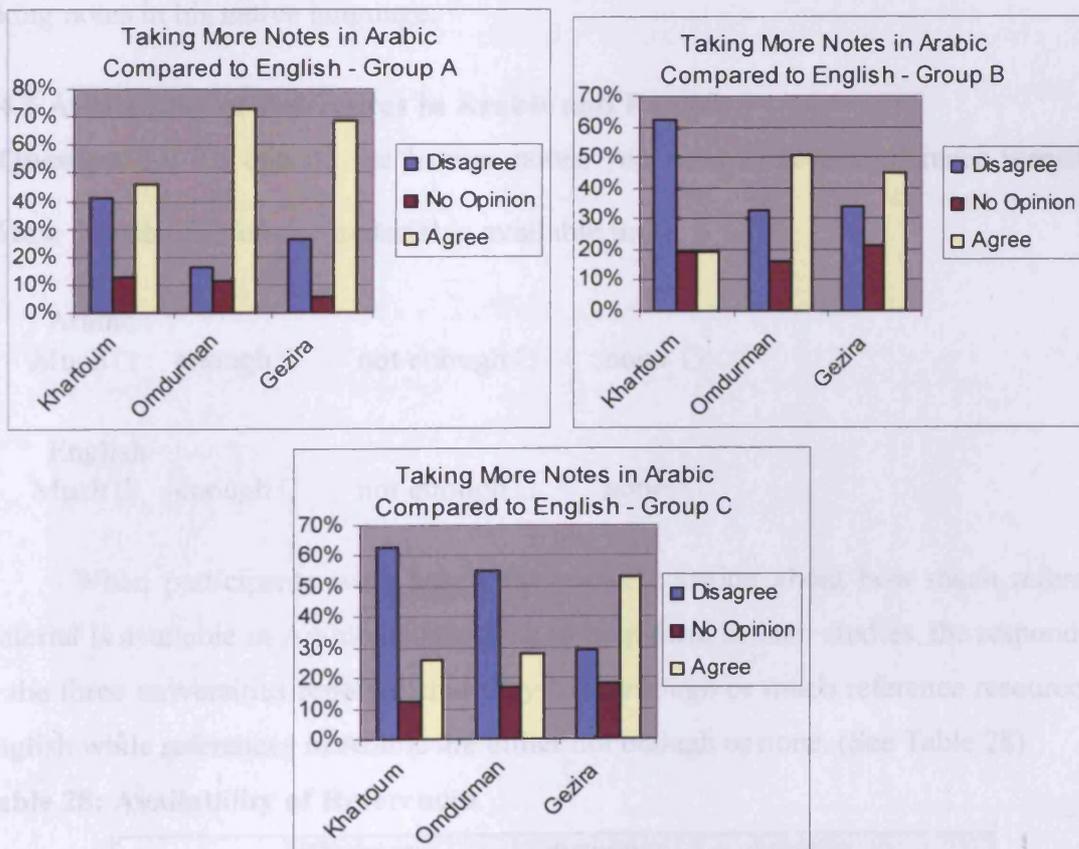
The above question aimed to compare Arabic to English, and thus the question asked the participants whether they agree or disagree that more notes can be captured when a lecture is delivered in Arabic. The given percentages were around 50% which shows that students were almost equally divided in their opinion about capturing notes. The highest percentages for two universities, Omdurman (56.9%) and Gezira (48.8%) reported that they capture more notes in Arabic than English. The third university, Khartoum (52.9%) disagreed that more notes in Arabic can be captured. Some participants in the three universities (Khartoum 13.2%, Omdurman 13.7%, and Gezira 11.2%) claimed to have no opinion. (See Table 27)

Table 27: In Arabic, I may capture more notes than I do in English

	Khartoum	Omdurman	Gezira
Strongly Disagree	22.5%	10.5%	8.5%
Disagree	30.4%	19.0%	31.5%
Total disagreement	52.9%	29.5%	40%
No opinion	13.2%	13.7%	11.2%
Agree	27.0%	42.5%	34.2%
Strongly Agree	6.9%	14.4%	14.6%
Total agreement	33.9%	56.9%	48.8%

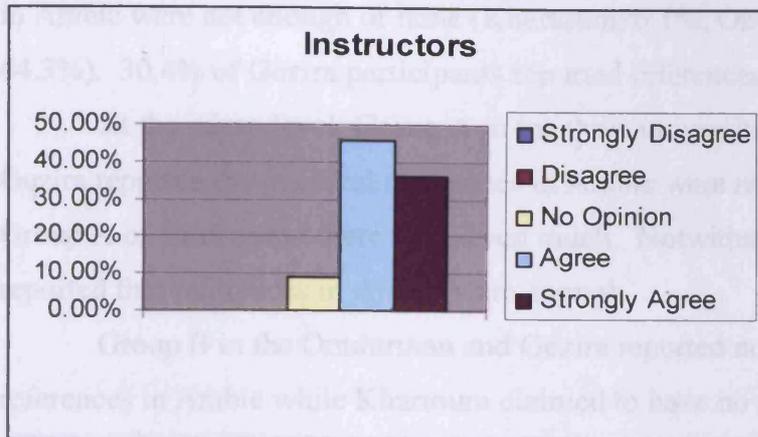
At the micro level, Group A in the three universities showed that they can capture more notes in Arabic while some disagreed or said not to have an opinion. Group B (3rd & 4th) of Khartoum disagreed that they can capture more notes in Arabic than English, however, fewer participants agreed or declared to have no opinion. Those in Group B in the other two universities who said they can capture more notes in Arabic than English were more than those who disagreed. Group C showed a similar pattern of responses with a drastic change in Group C of Omdurman. The highest percentage was those who disagreed that they can capture more notes in Arabic than English. An observation could be gleaned that students after the first and second years were able to capture notes in English.

Chart 28: Taking More Notes in Arabic (Groups)



Instructors were in line with Omdurman and Gezira universities that students can capture more notes in Arabic than English. (See Chart 30)

Chart 29: Taking More Notes in Arabic (Instructors)



An advantage of a native language over a foreign language is the relative high competency a native speaker has, which enables him to spend less time in reading or taking notes in his native language.

5.4.5 Availability of References in Arabic and English

Question 34: To expand the lecture notes, you need to access reference resources.

How much of reference material is available in

- a) Arabic
 Much enough not enough none
- b) English
 Much enough not enough none

When participants were asked the above question about how much reference material is available in Arabic and English to help them in their studies, the respondents in the three universities reported that they have enough or much reference resources in English while references in Arabic are either not enough or none. (See Table 28)

Table 28: Availability of References

Q34	Khartoum		Omdurman		Gezira	
	Arabic	English	Arabic	English	Arabic	English
Much	0.0%	35.8%	1.3%	17.0%	5.4%	31.5%
Enough	3.9%	59.8%	9.8%	76.5%	30.4%	56.9%
Not enough	35.8%	4.4%	64.1%	5.9%	56.6%	11.2%
None	60.3%	0.0%	24.8%	0.7%	7.7%	0.4%

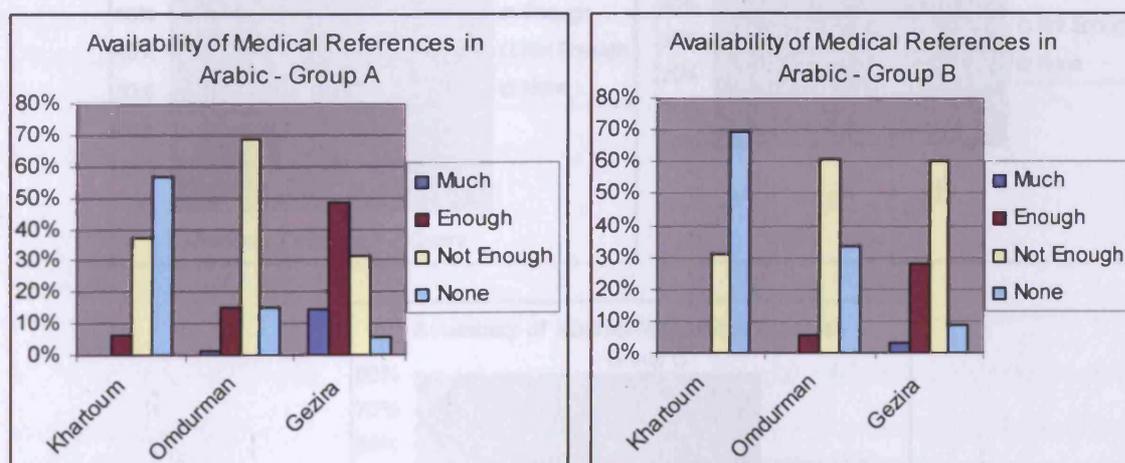
The Table showed that references in English in the three universities were enough or much (Khartoum 95.6%, Omdurman 93.5%, Gezira 88.4%) while references in Arabic were not enough or none (Khartoum 96.1%, Omdurman 88.9%, Gezira 64.3%). 30.4% of Gezira participants reported references in Arabic were enough.

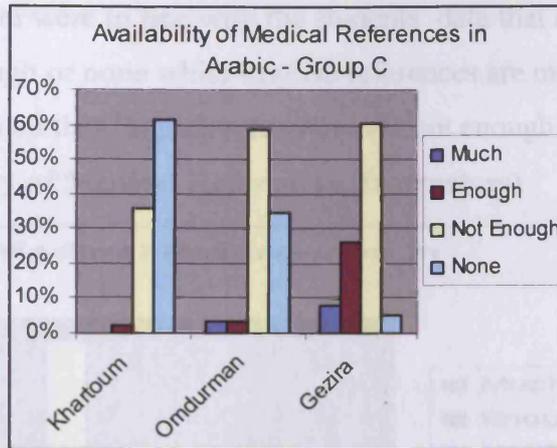
At the micro level, Group A in the three universities with the exception of Gezira reported that medical references in Arabic were not enough or there were none. Group A of Gezira said there were even much. Notwithstanding, some of Group A reported that references in Arabic were enough.

Group B in the Omdurman and Gezira reported not to have enough medical references in Arabic while Khartoum claimed to have no references in Arabic; nonetheless, others said there were not enough. Some of Gezira Group B claimed to have many references in Arabic while some said to have none.

Most of Khartoum Group C reported to have no medical references in Arabic; however, some said they do not have enough. Group C of Omdurman showed to experience shortish in Arabic medical references. Group C of Gezira gave different responses, some of them claimed to have much, some it was enough, others said there were none; but the majority reported a shortish in Arabic medical references (See Charts 31).

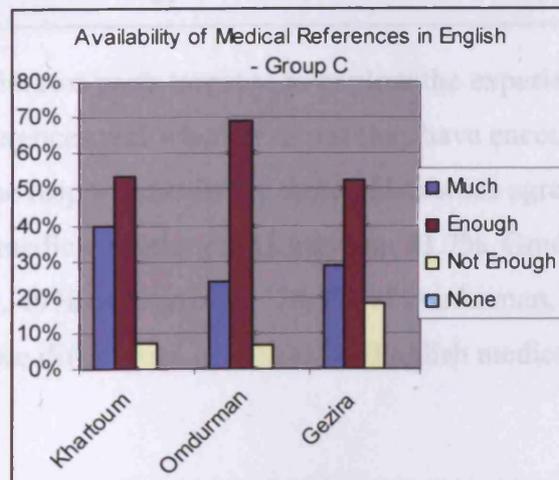
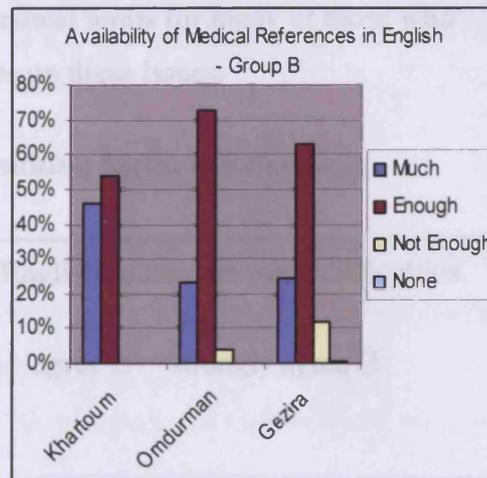
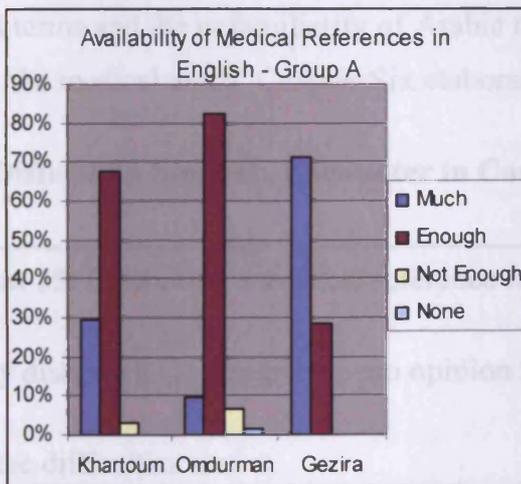
Chart 30: Availability of Medical References in Arabic (Groups)





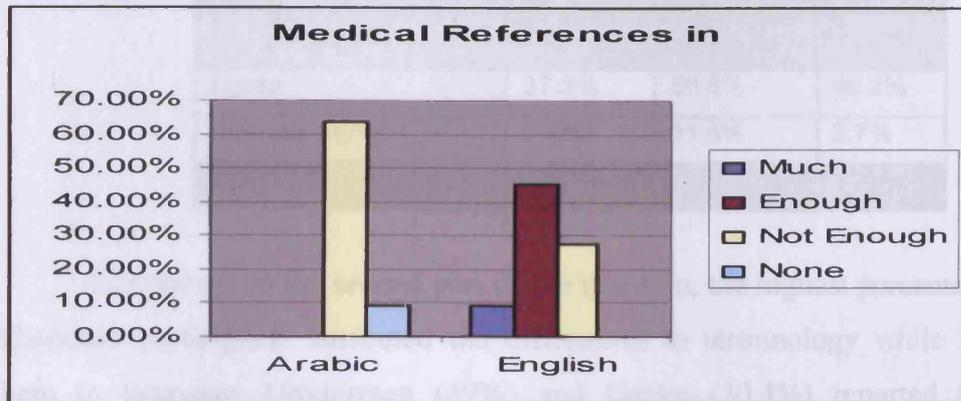
For references in English, Group A in the three universities reported English references were enough and some especially Group A of Gezira said they were much. Group B and Group C in the three universities generally showed they were enough and some reported they were even much (See Charts 32).

Chart 31: Availability of Medical References in English (Groups)



Instructors' data were in line with the students' data that medical references in Arabic either not enough or none while English references are more than enough. However, 27.3% claimed that English references are not enough. (See Chart 33)

Chart 32: Availability of Medical References (Instructors)



Scarcity of Arabic references offer reasons for many issues. For example, the reading assignments in the three universities depended heavily on English, the unawareness of many of Arab medical professionals of the ability of Arabic to form medical terms and the unfamiliarity of Arabic medical terms for many of those who work in the medical arena. Chapter Six elaborates on these issues.

5.4.6 Difficulties Students Encounter in Consulting Medical References

Question 35: Consulting a medical reference in English causes me some difficulties.

Strongly disagree disagree no opinion agree strongly agree

If so, the difficulties are

Language-related Terminology-related Other specify _____

Question 35 with its two parts targeted to explore the experiences of the students in consulting medical references and whether or not they have encountered difficulties and what causes them. The respondents in the three universities agreed that there were difficulties in consulting medical references (Khartoum 43.7%, Omdurman 70.6%, and Gezira 48.9%). However, 49% of Khartoum, 24.8% of Omdurman, and 40% of Gezira do not agree that there were difficulties in consulting English medical references. (See Table 29)

Table 29: Difficulties in References

	Khartoum	Omdurman	Gezira
Strongly Disagree	20.1%	9.8%	12.3%
Disagree	28.9%	15.0%	27.7%
Total disagreement	49%	24.8%	40%
No opinion	7.4%	4.6%	11.2%
Agree	37.3%	58.8%	46.2%
Strongly Agree	6.4%	11.8%	2.7%
Total agreement	43.7%	70.6%	48.9%

In response to the second part of the question, the highest percentage (32.4%) of Khartoum participants attributed the difficulties to terminology while 24.5% related them to language. Omdurman (49%) and Gezira (30.4%) reported the source of difficulties to be language related while others (33.3% and 22.3% respectively) attributed them to terminology. (See Table 30)

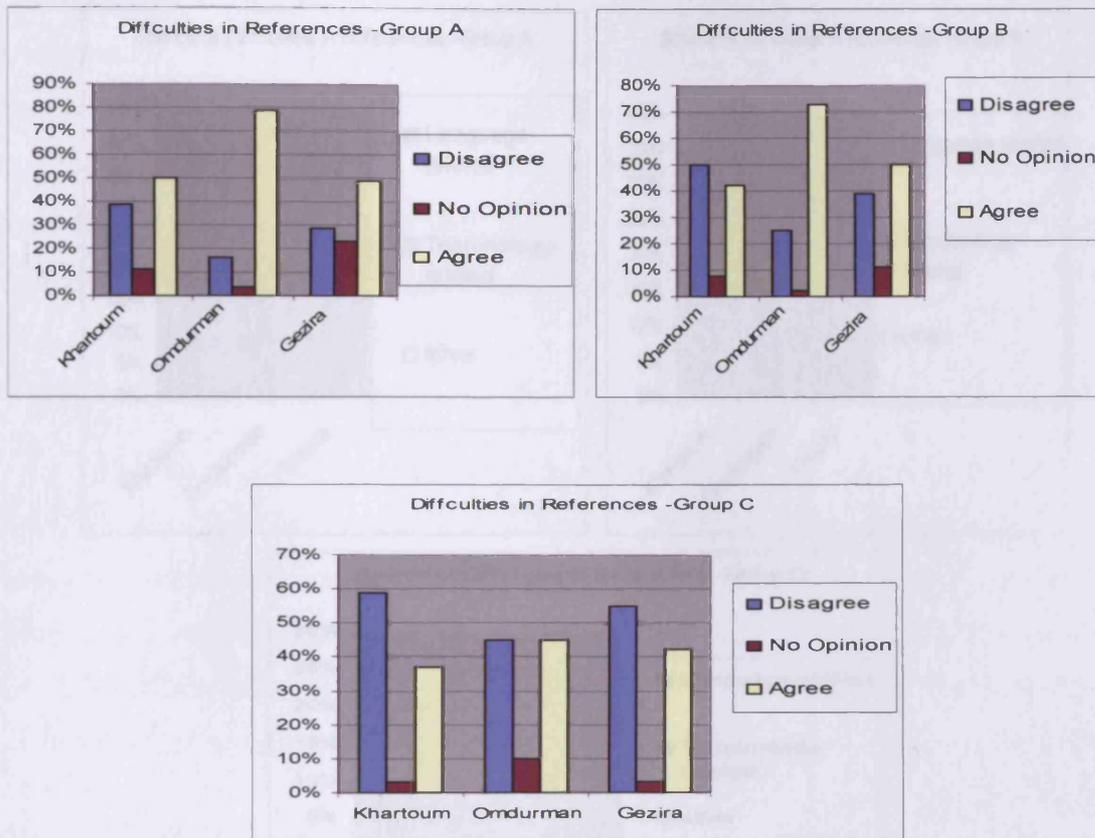
Table 30: Source of Difficulties

2d Part of Q35	Khartoum	Omdurman	Gezira
Language -related	24.5%	49.0%	30.4%
Terminology-related	32.4%	33.3%	22.3%
Other	0.5%	2.0%	0.8%

At the micro level, Group A in the three universities reported that they encounter difficulties in English medical references; however, some disagreed and others showed no opinion. In Group B of Khartoum, those who disagreed that they encounter difficulties were more than those who agreed. In Omdurman and Gezira, there was an increase in the percentage of those who disagreed.

Most of Group C in the three universities disagreed that they face any difficulties in English references. This change may have happened due to the extended exposure to English.

Chart 33: Difficulties in References (Groups)

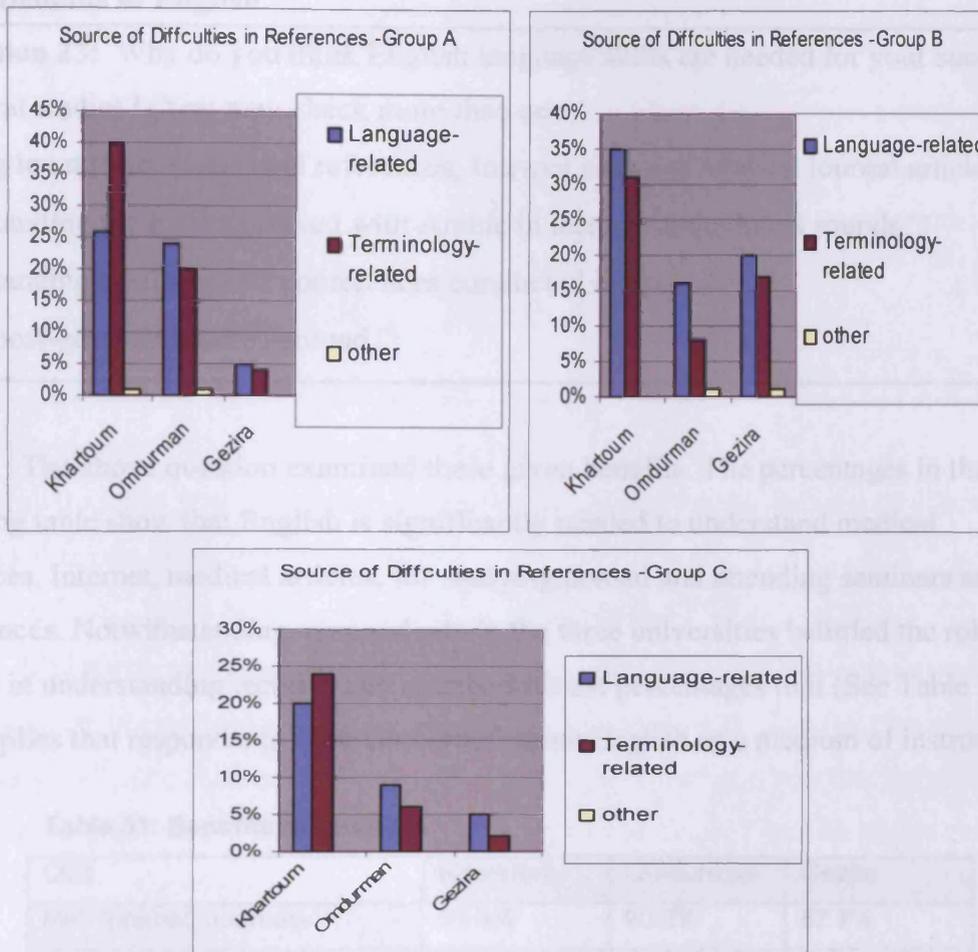


The majority of Group A and Group B in the three universities reported to have difficulties in consulting English references while few of them reported not to face such difficulties. They related the difficulties to the three anticipated causes: language, terminology or other.

5.5 English as a Language of Instruction

This section highlights the advantages and disadvantages of English as a medium of instruction. It commences with displaying the levels of English spoken by students. Then, it explores their understanding of medical English. It also gauges their awareness of the percentage of medical terminology in a piece of a medical textbook. It explores if students need English in their future studies. It also checks the language skills they consider important for themselves and the new students to the college. It concludes with the stance of the faculty members on the above issues.

Chart 34 Sources of Difficulties in References (Groups)



6.4% of the instructors disagreed that they experience some difficulties in consulting a medical reference in English while 54.6% agreed that they do and the sources of difficulty are language-related (91.1%), terminology-related (27.3%) and unfamiliar terms (18.2%).

5.5 English as a Language of Instruction

This section highlights the advantages and disadvantages of English as a medium of instruction. It commences with displaying the benefits of English as seen by students. Then, it explores their understanding of medical English. It also checks their awareness of the percentage of medical terminology in a page of a medical textbook. It explores if students need English in their future studies. It also elicits the language skills they consider important for themselves and the new comers to the college. It concludes with the stance of the faculty members on the above issues.

5.5.1 Benefits of English

Question 23: Why do you think English language skills are needed for your success in medical studies? (You may check more than one)

Reading to understand medical references, Internet sites and medical journal articles

Understanding the English mixed with Arabic in lectures and clinical rounds

Understanding seminars and conferences conducted in English

Future post-graduate studies abroad

The above question examined these given benefits. The percentages in the following table show that English is significantly needed to understand medical references, Internet, medical articles, for studying abroad and attending seminars and conferences. Notwithstanding, respondents in the three universities belittled the role of English in understanding lectures and ascribed lowest percentages to it. (See Table 31) This implies that respondents were concerned about English as a medium of instruction.

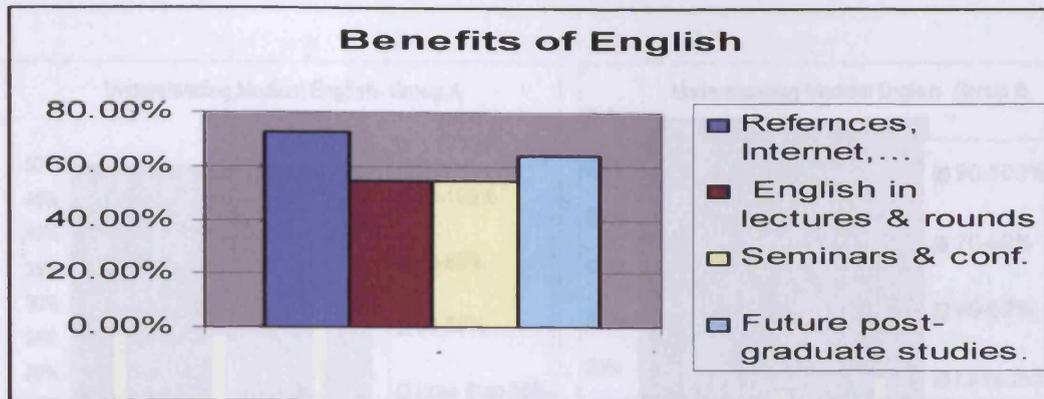
Table 31: Benefits of English

Q23	Khartoum	Omdurman	Gezira
Ref. Internet, Journals	95.6%	90.8%	87.7%
Understanding lectures	51.5%	58.8%	53.5%
Seminars & conferences	82.8%	72.5%	75.4%
Studying abroad	92.6%	84.3%	88.8%

Instructors thought that their students need English language skills for the following:

1. Reading to understand medical references, Internet sites and medical journal articles (72.7%).
2. Understanding the English mixed with Arabic in lectures and clinical rounds (54.5%).
3. Understanding seminars and conferences conducted in English (54.5%).
4. Future post-graduate studies abroad (63.6%).

Chart 35: Benefits of English (Instructors)



5.5.2 Expectancy of Understanding English

Question 16: How much do you expect to understand when the lecture/ the clinical round is presented only in English?

90-100 % 70-89 % 50-69% Less than 50 % 0%

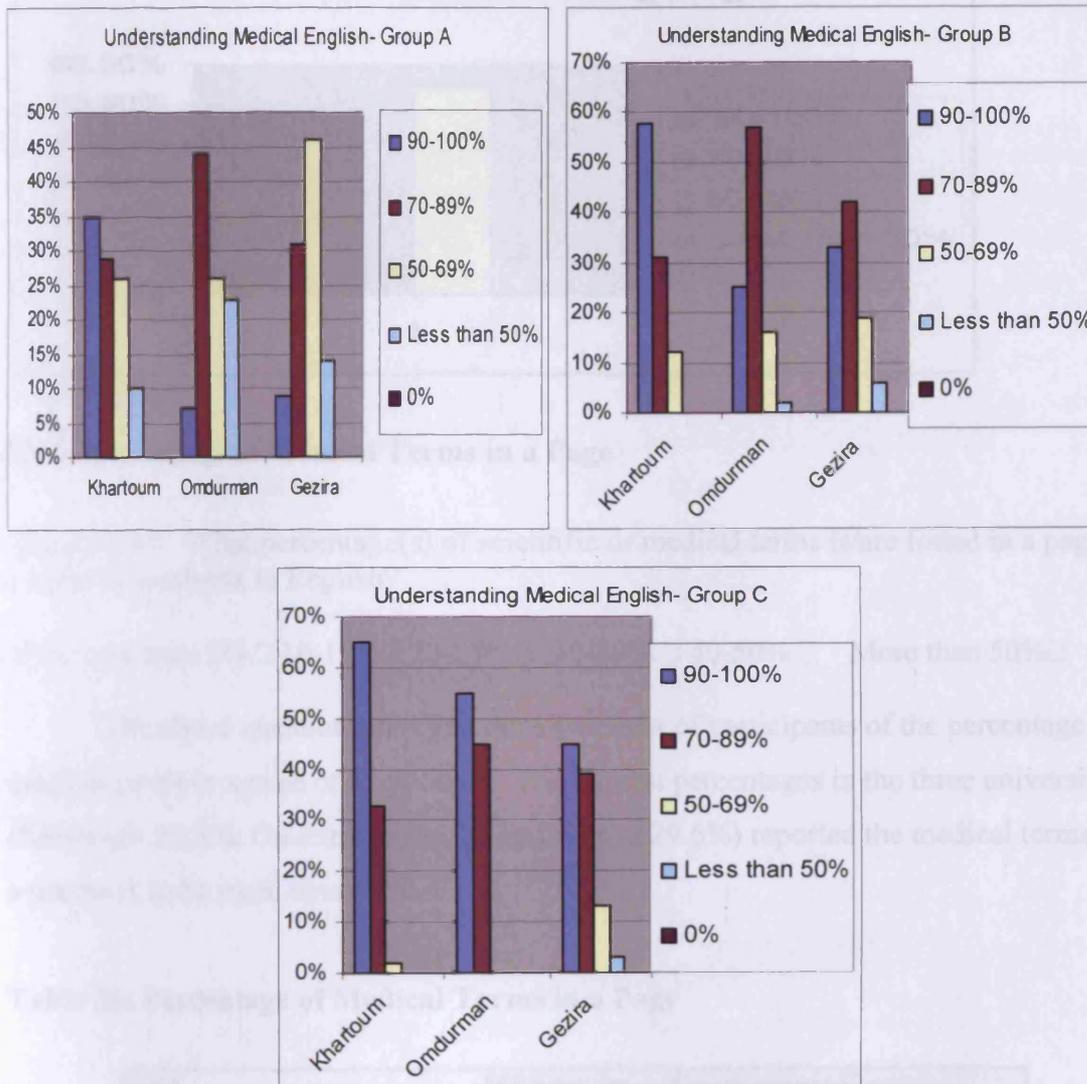
The above question explored how much is expected from students to understand when a lecture or a clinical round is conducted in English only. The responses in the following table showed that at the range of 90-100%, Khartoum was the highest in claiming to understand medical English in lectures and clinical rounds. Omdurman and Gezira highest percentages showed that they understand in the range of 70-89%. (See Table 32)

Table 32: Ranges of Understanding Medical English

Percentage	Khartoum	Omdurman	Gezira
90-100 %	50.5%	22.2%	31.2%
70-89 %	30.9%	48.4%	40.0%
50-69 %	14.2%	17.6%	21.9%
Less than 50 %	4.4%	11.8%	6.5%
0%	0.0%	0.0%	0.4%

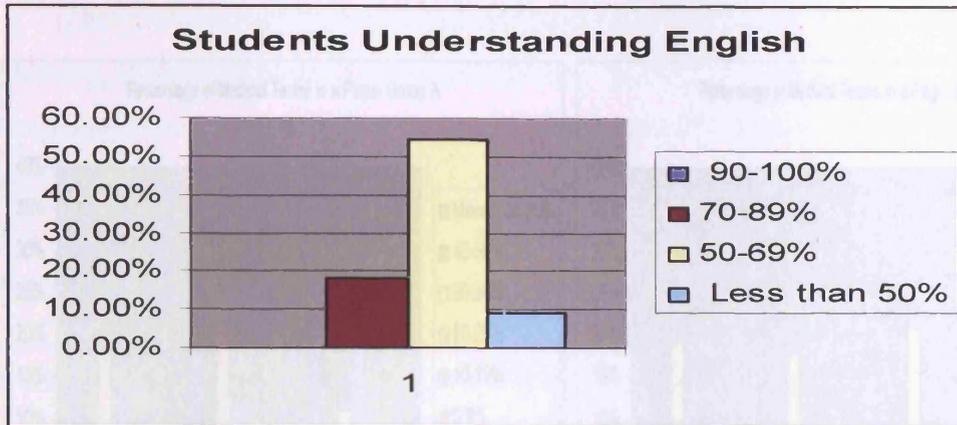
At the micro level, the highest percentages in Group A were for those who understand over 90% in Khartoum, at the range of 70% to 89% in Omdurman and at the range of 50% to 69% in Gezira. The pattern changed gradually through years. Smaller ranges started to decrease and disappeared in the 5th and 6th years where the range of understanding over 70%. Long exposure to the language may have led to an increase in understanding.

Chart 36: Expectancy of Understanding Medical English (Groups)



54.5% of the instructors who responded expected their students to understand in the range of 50-69% while 18.2% thought it to be the range of 70-89% and 9.1% considered less than 50% (See Chart 37)

Chart 37: Expectancy of Understanding Medical English (Instructors)



5.5.3 Percentage of Medical Terms in a Page

Question 42: What percentage(s) of scientific or medical terms is/are found in a page of a medical textbook in English?

5-9% less than 5% 10-19% 20-29% 30-39% 40-50% More than 50%

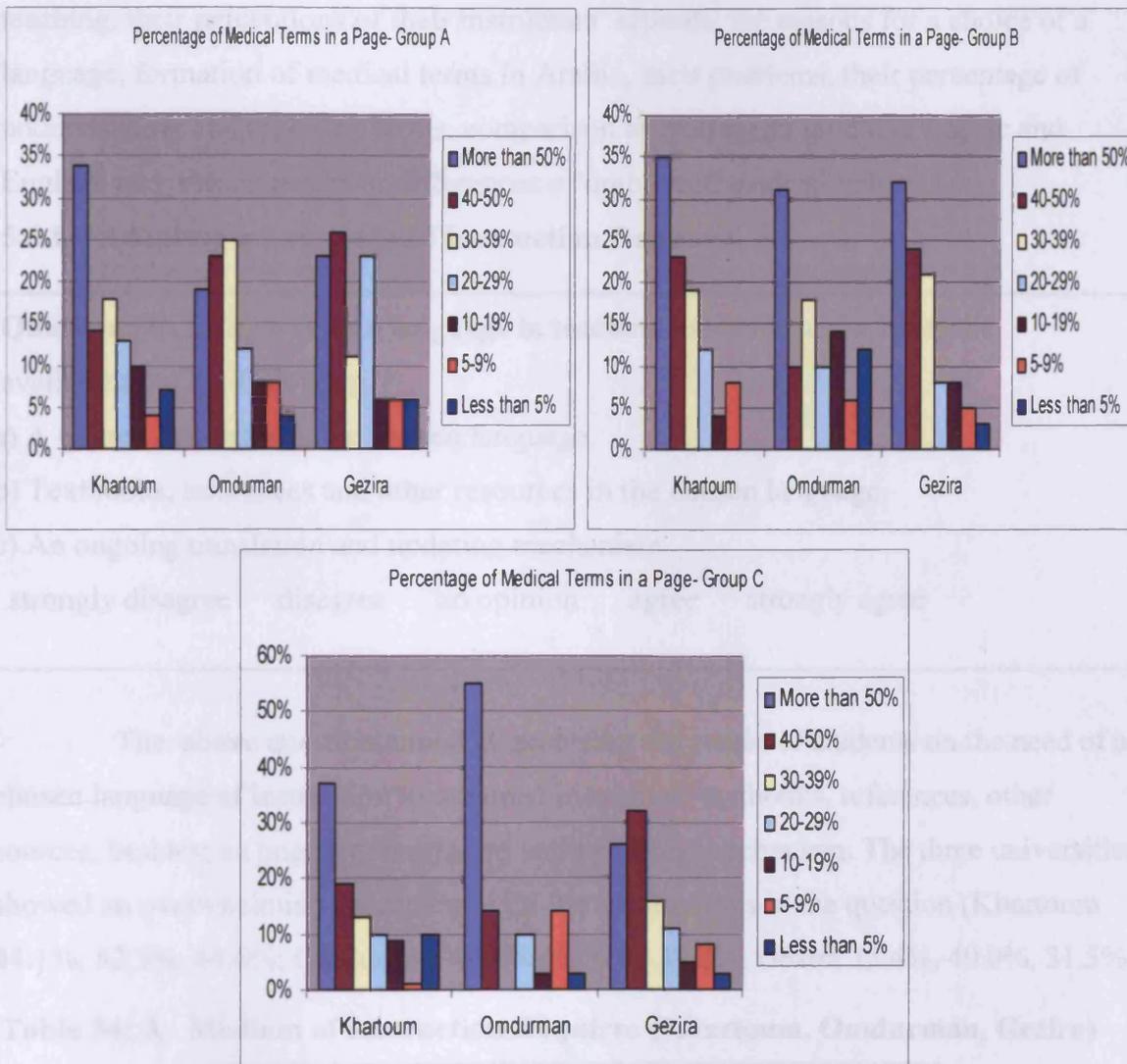
The above question surveyed the awareness of participants of the percentage of medical terms in a page of a textbook. The highest percentages in the three universities (Khartoum 35.3%, Omdurman 30.1%, and Gezira 29.6%) reported the medical terms in a textbook to be more than 50%.

Table 33: Percentage of Medical Terms in a Page

Q42	Khartoum	Omdurman	Gezira
More than 50%	35.3%	30.1%	29.6%
40%-50%	17.2%	17.0%	25.4%
30%-39%	16.2%	17.6%	18.8%

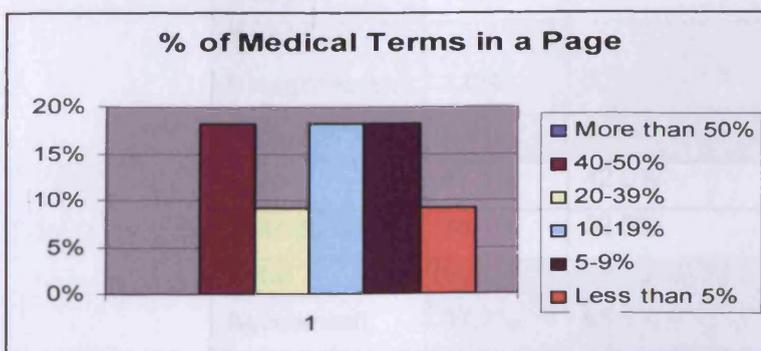
At the micro level, Group A, B & C in the three universities showed great diversity in estimating the percentage of medical terms in a page. (See Chart 38) The following chapter gives an extensive discussion of what might have led to this diversity.

Chart 38: Percentage of Medical Terms in a Page (Groups)



Instructors were not different from the students in estimating the percentages of scientific/ medical terms compared to common language in a page of a medical textbook in English. (See Chart 39)

Chart 39: Percentage of Medical Terms in a Page (Instructors)



5.6 Arabicization or Arabic as a Language of Instruction

This section displays what students have reported regarding adopting a language in teaching, their perceptions of their instructors' attitude, the reasons for a choice of a language, formation of medical terms in Arabic, their problems, their percentage of understanding and retaining terms, comparison of reading an article in Arabic and English and the sameness or differences of arabicized medical terms.

5.6.1 Adopting a Language of Instruction Requires:

Question 36: Using a certain language in teaching medicine necessitates the availability of the following: -

- a) A trained instructor in the chosen language.
 - b) Textbooks, references and other resources in the chosen language.
 - c) An ongoing translation and updating mechanism
- strongly disagree disagree no opinion agree strongly agree

The above question aimed at exploring the stance of students on the need of a chosen language of instruction to a trained instructor, textbooks, references, other sources, besides; an ongoing translation and updating mechanism. The three universities showed an overwhelming agreement with the assumptions in the question (Khartoum 44.1%, 52.5%, 44.6%; Omdurman 44.4%, 51.0%, 39.2%; Gezira 35.4%, 40.0%, 31.5%)

Table 34: A Medium of Instruction Requires (Khartoum, Omdurman, Gezira)

Q36	Khartoum		
	Trainer	Textbooks & References	Updating mechanism
Strongly Disagree	1.0%	1.0%	2.5%
Disagree	1.0%	1.5%	6.4%
Total Disagreement	2.0%	2.5%	8.9%
No opinion	6.9%	2.5%	5.4%
Agree	47.1%	42.6%	41.2%
Strongly Agree	44.1%	52.5%	44.6%
Total Agreement	91.2%	95.1%	85.8%

Khartoum participants reported that choosing a language of instruction necessitates availability of trained instructors (91.2%), textbooks and references (95.1%) and an updating mechanism (85.8%).

Omdurman			
Q36	Trainer	Textbooks & References	Updating mechanism
Strongly Disagree	3.9%	3.9%	4.6%
Disagree	2.0%	3.9%	3.3%
Total Disagreement	5.9%	7.8%	7.9%
No opinion	5.2%	5.2%	9.8%
Agree	44.4%	35.9%	43.1%
Strongly Agree	44.4%	51.0%	39.2%
Total Agreement	88.8%	86.9%	82.3%

Omdurman participants reported that choosing a language of instruction necessitates availability of trained instructors (88.8%), textbooks and references (86.9%) and an updating mechanism (82.3%).

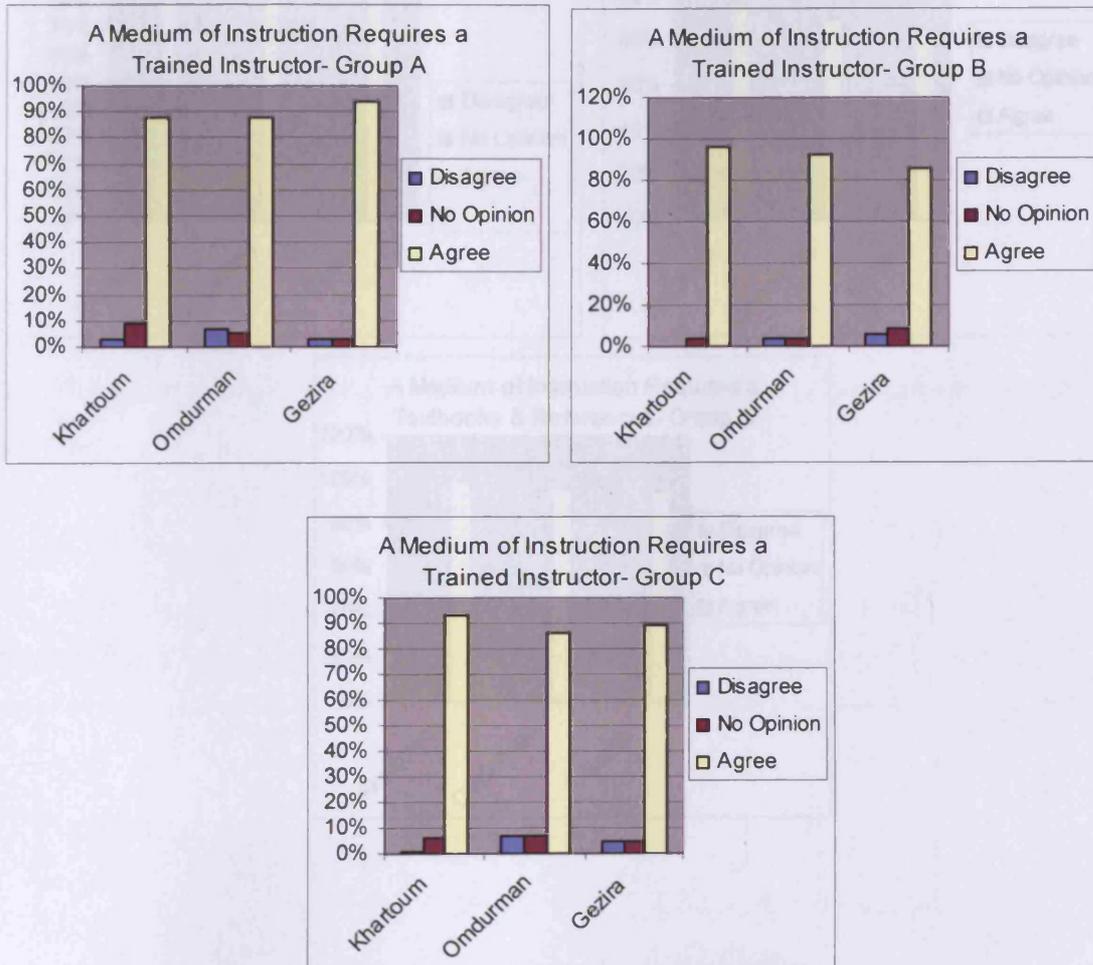
Gezira			
Q36	Trainer	Textbooks & References	Updating mechanism
Strongly Disagree	2.3%	2.3%	2.7%
Disagree	3.1%	6.2%	3.1%
Total Disagreement	5.4%	8.5%	5.8%
No opinion	7.3%	5.4%	10.8%
Agree	51.9%	46.2%	51.9%
Strongly Agree	35.4%	40.0%	31.5%
Total Agreement	87.3%	86.2%	83.4%

Gezira participants reported that choosing a language of instruction necessitates availability of trained instructors (87.3%), textbooks and references (86.2%) and an updating mechanism (83.4%).

At the micro level, Group A, B and C in the three universities showed an overwhelming agreement that a medium of instruction requires a trained instructor.

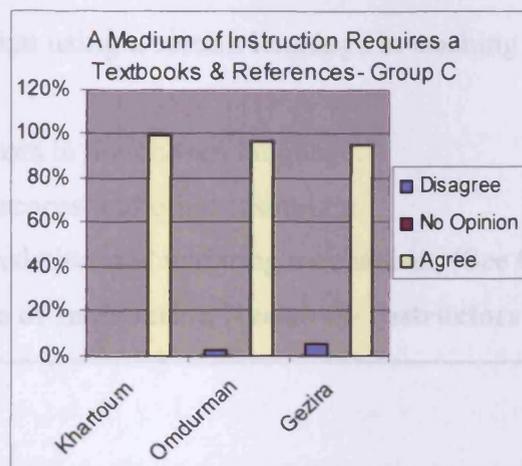
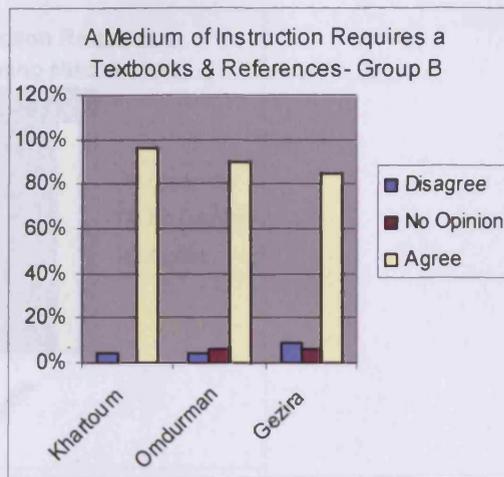
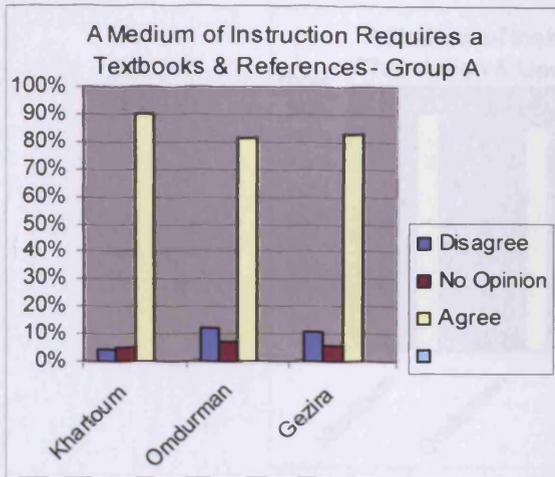
Chart 40: A Language of Instruction Requires

a- A Trained Instructor



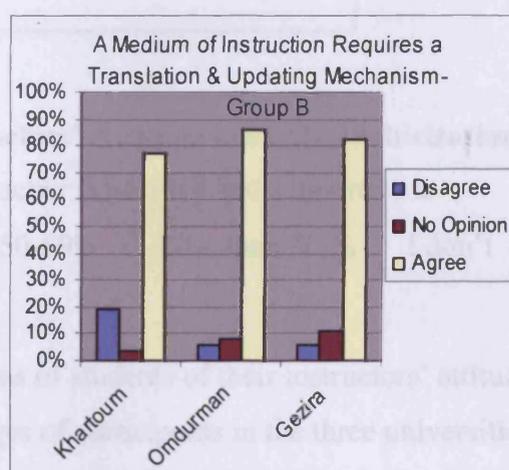
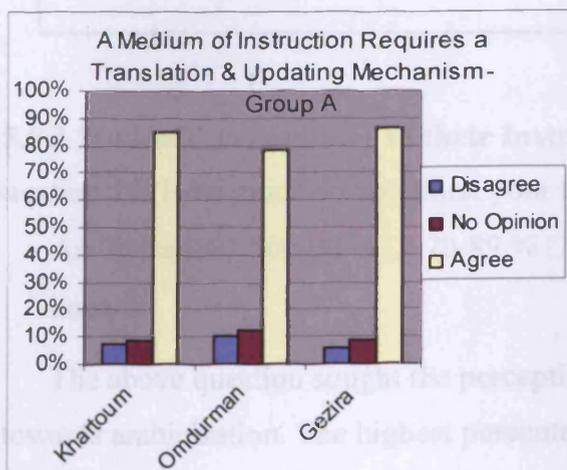
b- Available Textbooks and References

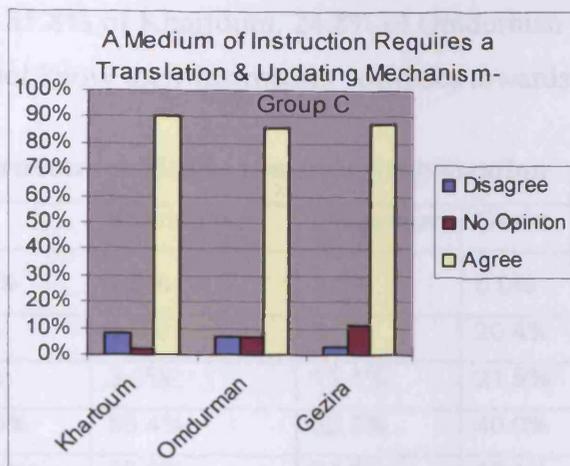
Groups A, B and C in the three universities also agreed that implementing a medium of instruction requires textbooks and references.



c- An Ongoing Translation & Updating Mechanism

In the three universities, the three groups said that using a medium of instruction requires an ongoing translation and updating mechanism.

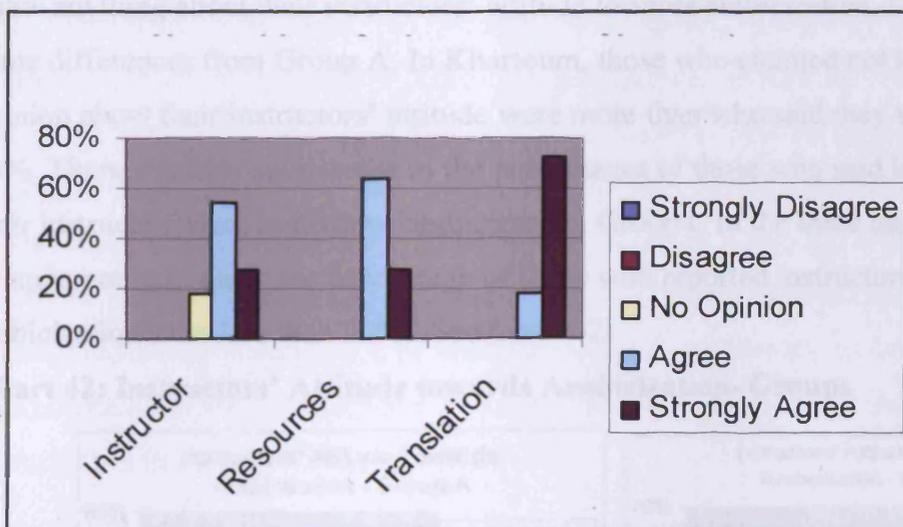




Instructors agreed that using a certain language in teaching medicine necessitates the availability of:

1. Trained instructors in the chosen language.
2. Textbooks, references and other resources.
3. An ongoing translation and updating mechanism. (See Chart 41)

Chart 41: A Language of Instruction Requires- Instructors



5.6.2 Students' Perceptions of their Instructors' Attitude towards Arabicization

Question 14: How much do you think your teacher is positive and supportive to Arabicization? 90-100 % 70-89 % 50-69% Less than 50 % I don't know

The above question sought the perceptions of students of their instructors' attitudes towards arabicization. The highest percentages of participants in the three universities perceived that less than 50% of their instructors are positive and supportive to the

arabicization process. 35.8% of Khartoum, 24.8% of Omdurman and 13.1% of Gezira claimed that they do not know their instructors' attitudes towards arabicization.

Table35: Instructors Attitude towards Arabicization

Q14	Khartoum	Omdurman	Gezira
90-100%	1.0%	3.3%	5.0%
70-89%	2.9%	8.5%	20.4%
50-69%	3.9%	11.1%	21.5%
Less 50%	56.4%	52.3%	40.0%
don't know	35.8%	24.8%	13.1%

At the micro level, Group A in Khartoum and Omdurman reported that less than 50% of their instructors have positive attitude towards arabicization. Gezira reflected almost even distribution of percentages which highlights the efforts of the university to promote arabicization. There were noticeable percentages of those who claimed not to know anything about their instructors' attitude towards arabicization. Group B showed some differences from Group A. In Khartoum, those who claimed not to have an opinion about their instructors' attitude were more than who said they were less than 50%. There was also an increase in the percentages of those who said less than 50% of their instructors were in favor of arabicization. Group C in the three universities showed an apparent increase in the percentage of those who reported instructors in favor of arabicization were less than 50%. (See Chart 42)

Chart 42: Instructors' Attitude towards Arabicization- Groups

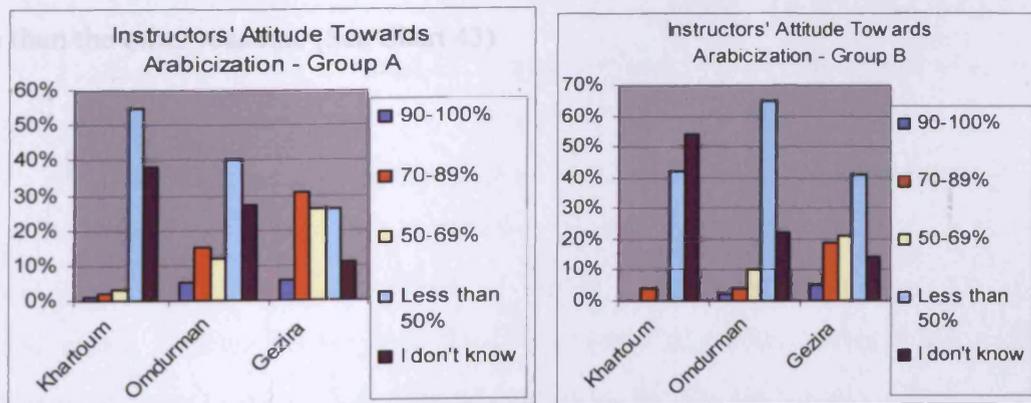
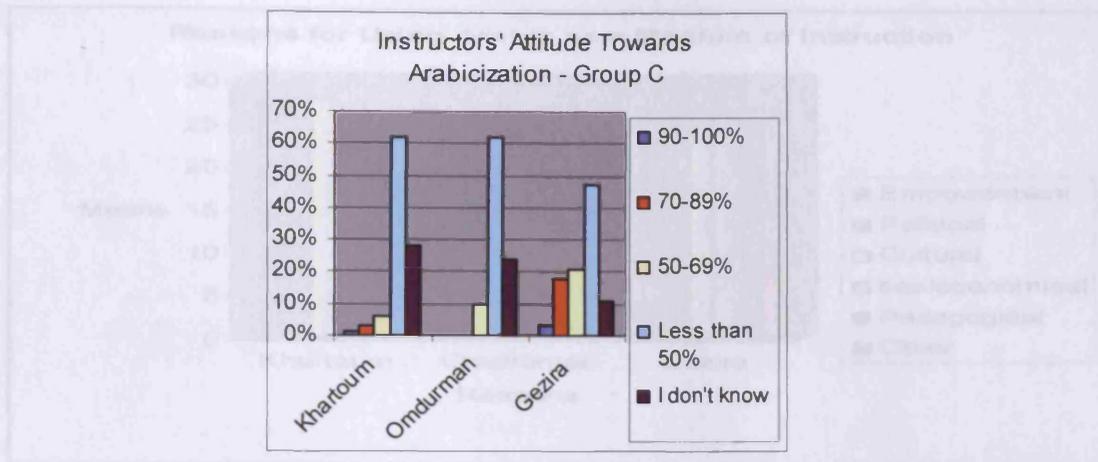


Chart 43: Reasons for Using Arabic as a Medium of Instruction – Universities



5.6. 3 Reasons for Using Arabic as a Medium of Instruction

Question 20: What do you see as a main reason for using Arabic as a medium of instruction in the college of medicine? Please rank all those relevant in order from '1' downwards. empowerment of Arabic political factors cultural identity

The above question explored agreement and disagreement of students to the main reasons for using Arabic as a medium of instruction in teaching medicine. Students in the three universities differed in attributing and ranking the given reasons. Khartoum and Omdurman considered the main reasons for adopting Arabic as a medium of instruction to be: empowerment of Arabic, cultural identity and political factors and gave less importance for socioeconomic and pedagogical reasons. Students in Gezira were different from the students in the other two universities. They highlighted the socioeconomic, pedagogical and cultural identity as the main reasons behind arabicization and attributed less magnitude to empowerment and political reasons than the other reasons. (See Chart 43)

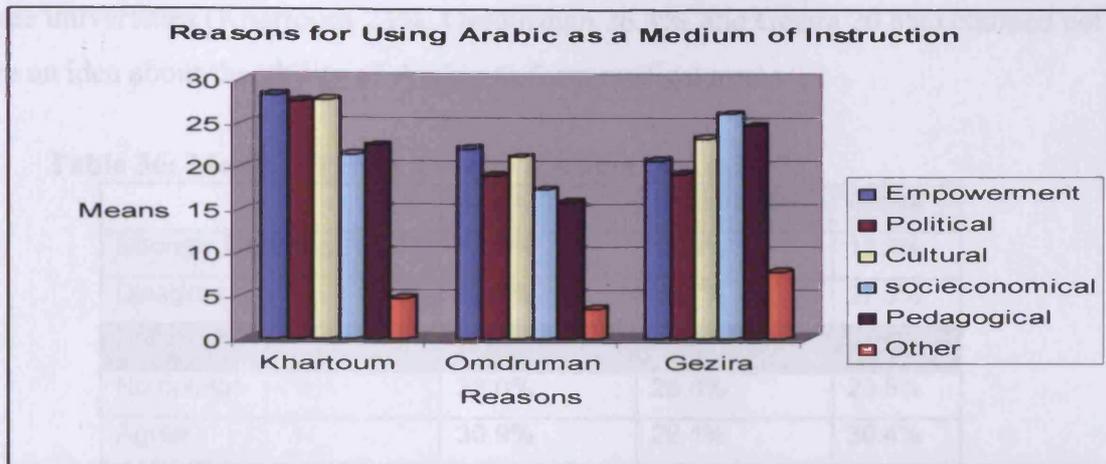
Table 4: Can Medical Terms be created in Arabic by Derivation, Construction and/or Analogy?

Question 20: Arabic can accommodate medical science terminology because new words can be formed by derivation, construction or analogy.

strongly disagree disagree no opinion agree strongly agree

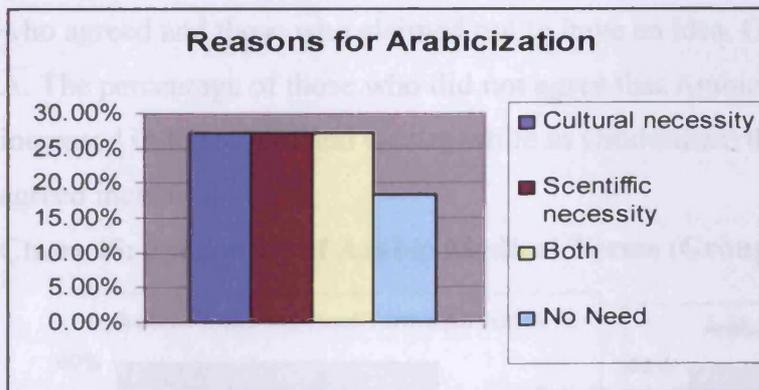
The above question investigated the awareness of students whether or not Arabic can accommodate medical terms. The highest percentages in the three universities (Khartoum 43.2%, Omdurman 39.9%, and Gezira 39.8%) showed an agreement that Arabic can accommodate medical terms. Nonetheless, the second highest percentages showed disagreement (33.8% of Khartoum, 33.3% of Omdurman and 39.6% of Gezira

Chart 43: Reasons for Using Arabic as a Medium of Instruction – Universities



Instructors were distributed in attributing reasons for using Arabic in teaching medicine. Some considered it a cultural necessity (27.3%), a scientific necessity (27.3%), and both (cultural and scientific) (27.3%) and some thought there was no need for it (18.2%)

Chart 44: Reasons for Arabicization-Instructors



5.6. 4 Can Medical Terms be created in Arabic by Derivation, Construction and/or Analogy?

Question 29: Arabic can accommodate medical science terminology because new words can be formed by derivation, construction or analogy.

strongly disagree disagree no opinion agree strongly agree

The above question investigated the awareness of students whether or not Arabic can accommodate medical terms. The highest percentages in the three universities (Khartoum 43.2%, Omdurman 39.9%, and Gezira 39.6%) showed an agreement that Arabic can accommodate medical terms. Nonetheless, the second highest percentages showed disagreement of 33.8% of Khartoum, 33.3% of Omdurman and 39.6% of Gezira

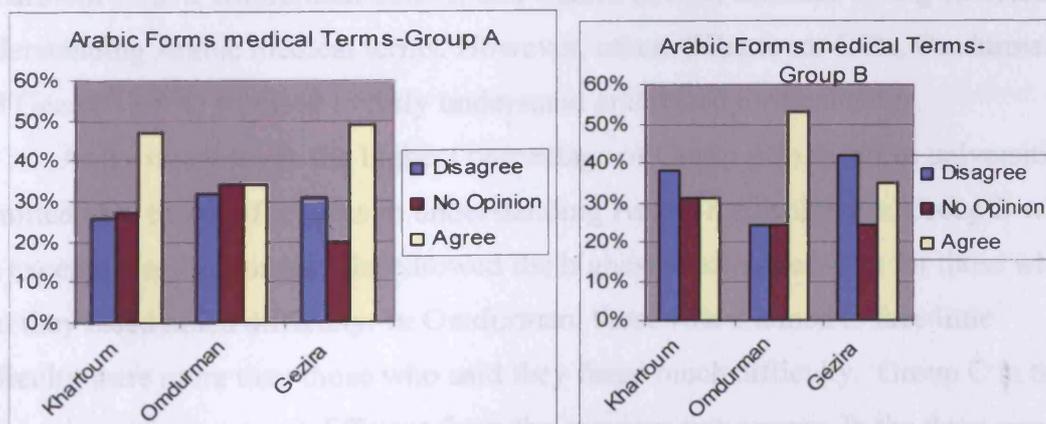
to the assumption that Arabic can accommodate medical terms. Noticeable percentages in the three universities (Khartoum 23%, Omdurman 26.8%, and Gezira 20.8%) claimed not to have an idea about the ability of Arabic to form medical terms.

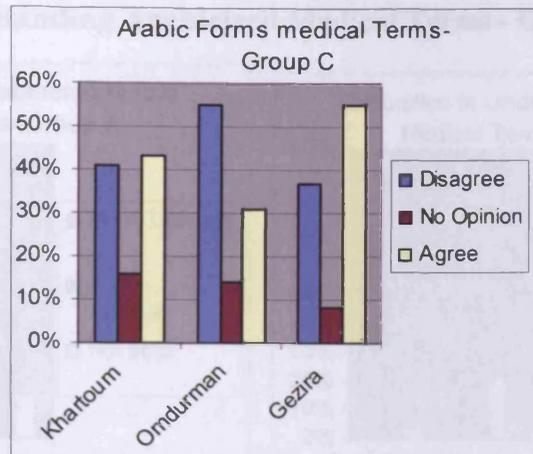
Table 36: Medical Terms Can be Created in Arabic?

	Khartoum	Omdurman	Gezira
Strongly Disagree	16.2%	19.6%	12.3%
Disagree	17.6%	13.7%	27.3%
Total disagreement	33.8%	33.3%	39.6%
No opinion	23.0%	26.8%	20.8%
Agree	30.9%	28.1%	30.4%
Strongly Agree	12.3%	11.8%	9.2%
Total agreement	43.2%	39.9%	39.6%

At the micro level, Group A in the three universities showed a realization of the ability of Arabic to form Arabic medical terms; nonetheless, some disagreed and others said they do not have any opinion. Omdurman showed almost equal factions of those who agreed and those who claimed not to have an idea. Group B differed from Group A. The percentage of those who did not agree that Arabic can form medical terms increased in Khartoum and Gezira while in Omdurman, the percentage of those who agreed increased.

Chart 45: Formation of Arabic Medical Terms (Groups)





91% of the instructors who responded agreed or strongly agreed that Arabic can form medical terms and thus they ascertained what the students had reported.

5.6.5 Understanding Arabicized Medical Terms

This section explored if students faced any problems in understanding arabicized medical terms, what percentage of them do they understand, and what causes these encountered difficulties?

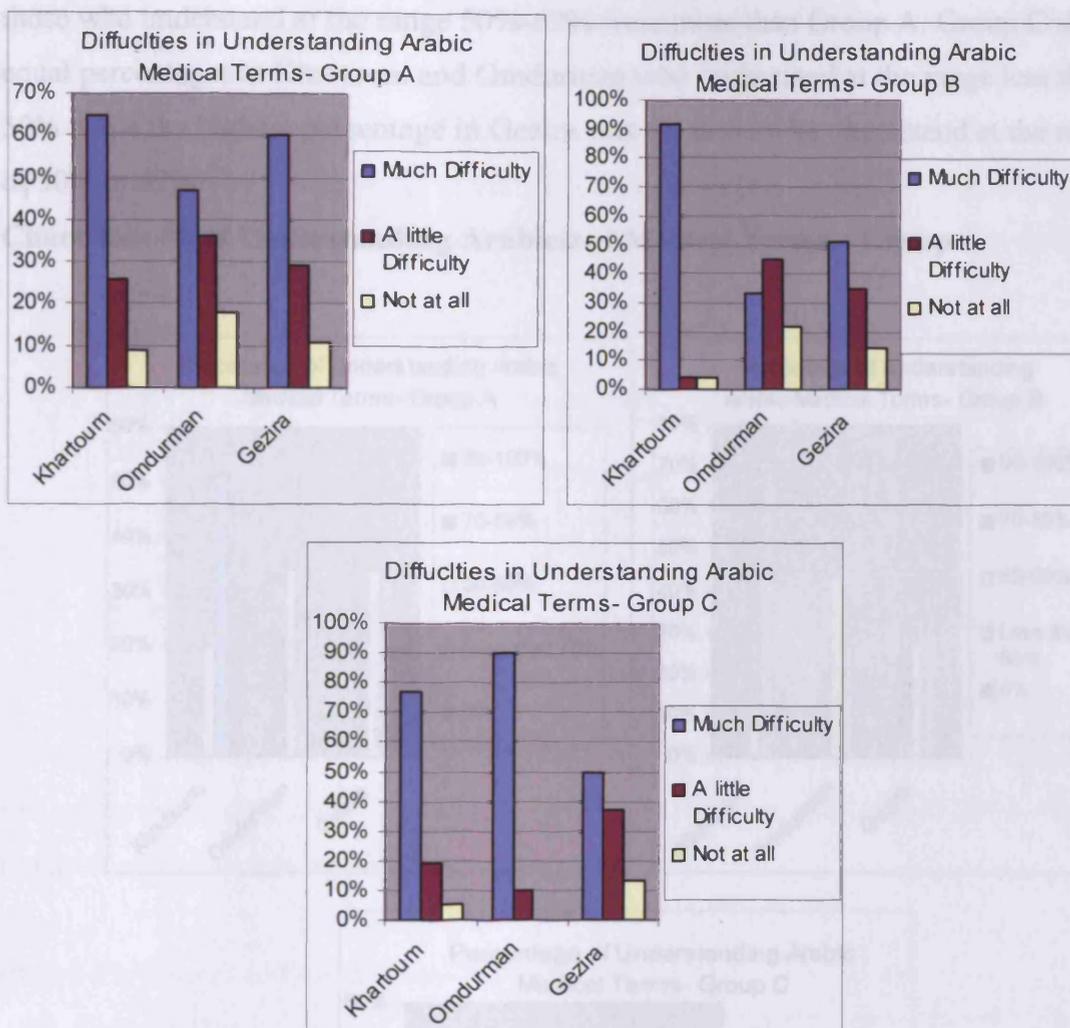
Question 25: Do you face any problems in understanding arabicized medical terms?

yes a little not at all

Question 25 explored whether or not participants face difficulties in understanding arabicized medical terms. More than half of the participants in each of the three universities (Khartoum 73.5%, Omdurman 50.3%, and Gezira 51.9%) admitted facing difficulties in understanding Arabic medical terms. However, others (Khartoum 6.4%, Omdurman 15.7%, and Gezira 13.8%) reported to fully understand arabicized medical terms.

At the micro level, the highest percentage of Group A in the three universities admitted they faced difficulties in understanding Arabic medical terms. Group B with the exception of Omdurman also showed the highest percentages were for those who said they faced much difficulty. In Omdurman, those who claimed to face little difficulty were more than those who said they faced much difficulty. Group C in the three universities were not different from the previous two groups. In the three groups in all universities, some reported that they faced little difficulty and others claimed not to have any difficulties. (See Chart 46)

Chart 46a: In Understanding Arabicized Medical Terms– Groups



Question 26: What is the percentage of your understanding of arabicized medical terms?

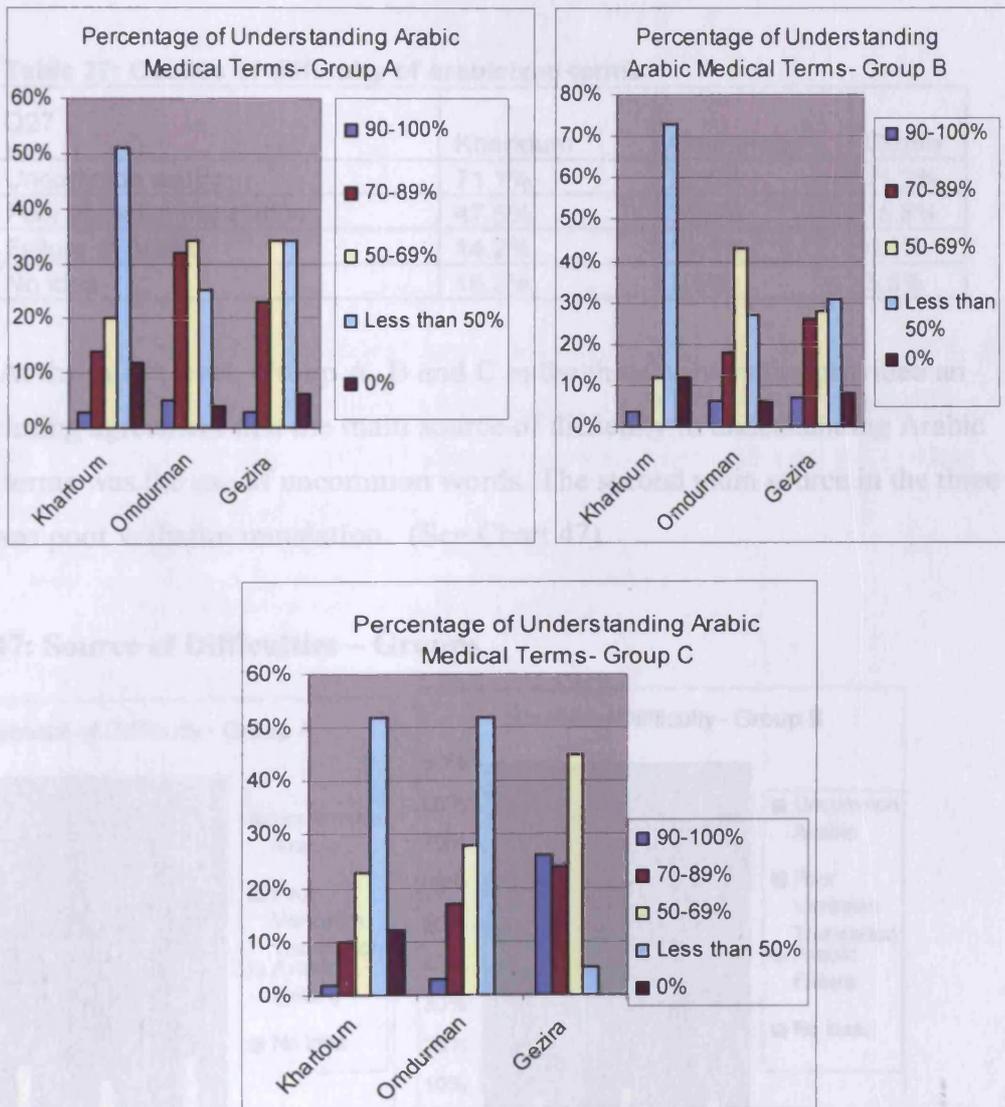
- 90-100 % 70-89 % 50-69% Less than 50 % 0%

Question 26 furthered the investigation into measuring the magnitude of the participants' understanding. Khartoum showed the highest percentage (54.4%) in the three universities. Participants reported to understand less than 50%. The second highest was 35.9% of Omdurman participants who reported to understand in the range of 50-69%. 31.2% of Gezira shared with them the same range (50-69%) of understanding Arabic medical terms.

At the micro level, students in Group A showed percentages of understanding Arabic terms to be at the range of 50% to 100%. Khartoum reported the highest percentage to be of those who understand less than 50%. The highest in Omdurman were those who claimed to understand at the range of 50%-69%. The highest in Gezira

showed both those who were at the range of 50% -69% and less than 50%. In Group B, those who understand at the range 50%-69% were more than Group A. Group C showed equal percentages at Khartoum and Omdurman who understand at the range less than 50% while the highest percentage in Gezira was for those who understand at the range of 50% to 69%.

Chart 46b: % of Understanding Arabicized Medical Terms – Groups



Question 27: What is the cause of difficulty in understanding some arabicized medical terms?

- use of uncommon Arabic words
- poor and verbatim translation
- Arabic language failure to accommodate the medical term no idea

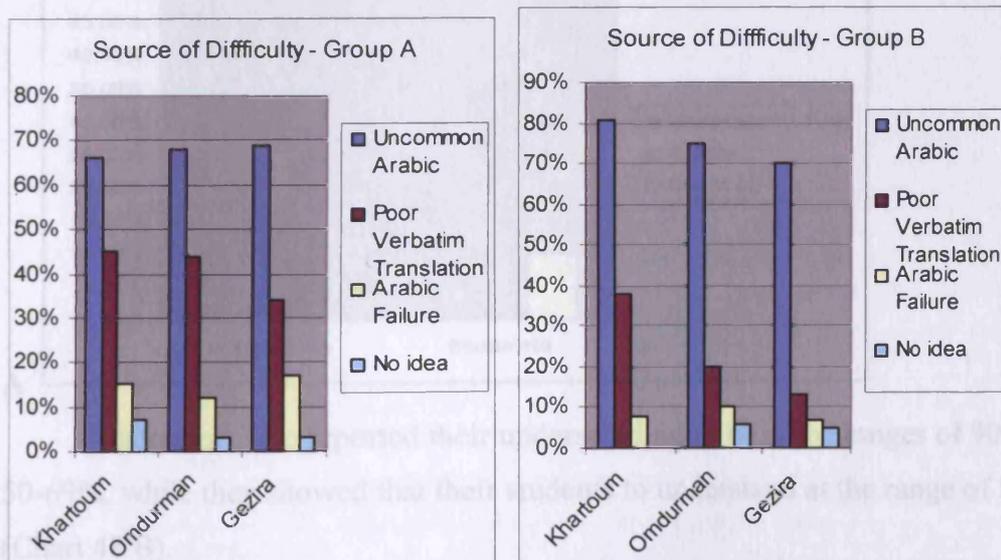
Question 27 intended to highlight the sources for these difficulties which were assumed to be: the use of uncommon Arabic words, poor and verbatim translation and the failure of Arabic to accommodate medical terms. The highest percentages in the three universities (Khartoum 71.1%, Omdurman 72.5%, and Gezira 71.2%) reported the cause to be the use of uncommon words. The second highest percentages (Khartoum 47.5%, Omdurman 35.3%, and Gezira 15.8%) showed that poor verbatim translation was the cause.

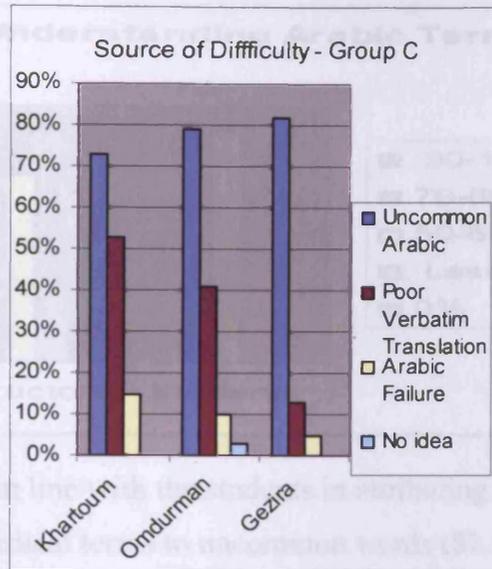
Table 37: Causes of difficulty of arabicized terms

Q27	Khartoum	Omdurman	Gezira
Uncommon words	71.1%	72.5%	71.2%
Poor verbatim translation	47.5%	35.3%	15.8%
Failure of Arabic	14.2%	11.1%	8.1%
No idea	16.2%	3.9%	3.8%

At the micro level, Group A, B and C in the three universities provided an overwhelming agreement that the main source of difficulty in understanding Arabic medical terms was the use of uncommon words. The second main source in the three groups was poor verbatim translation. (See Chart 47)

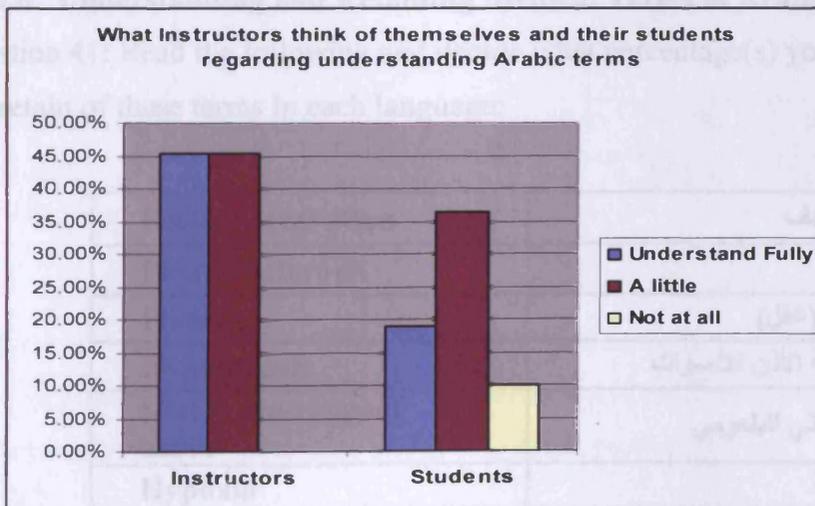
Chart 47: Source of Difficulties – Groups





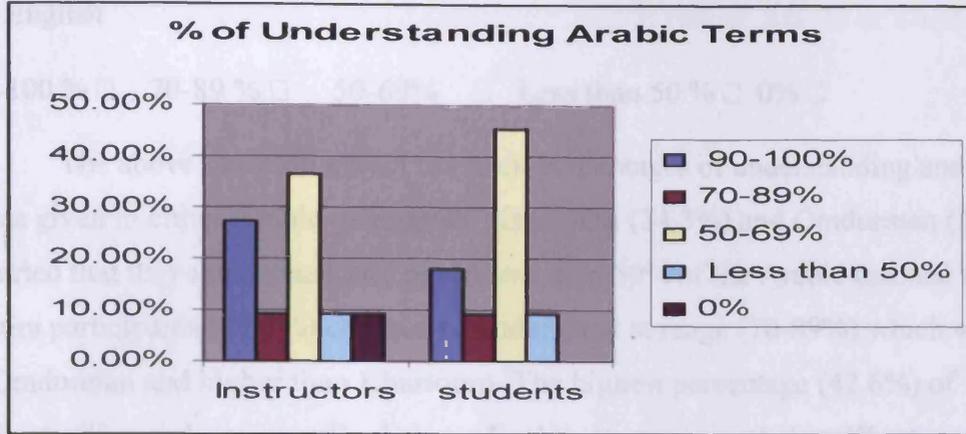
Equal percentages (45.5%) of the instructors who participated in the survey reported to understand Arabic medical terms fully and a little respectively. 36.4% of the instructors thought their students understand Arabic terms a little (See Chart 48).

Chart 48: What Instructors think of themselves and their students regarding understanding Arabic Medical Terms



A

Instructors also reported their understanding to be at the ranges of 90-100% and 50-69%, while they showed that their students to understand at the range of 50-69% (Chart 48 B).



B

Instructors were in line with the students in attributing the causes of difficulty in understanding Arabic medical terms to uncommon words (81.8%), in addition to poor and verbatim translation (18.2%) (See Table 38)

Table 38: Source of Difficulties- Instructors

Source	Uncommon Words	Poor & Verbatim Translation	Arabic Failure	No Idea
Percentage	81.8%	18.2%	0.0%	0.0%

5.6.6 Understanding and Retaining Medical Terms in Arabic and English

Question 41: Read the following and decide what percentage(s) you will understand and retain of these terms in each language:

Pectus excavation	الصدر المنكسف
Pleural sclerosis	تصلب جنبي
Placebo	دواء وهمي (غفل)
Hyperacusis	فرط حساسية الأذن للأصوات
Glosso pharyngeal nerve	العصب اللساني البلعومي
Hypoxia	نقص اكسجة
Immunosuppression	تثبيط مناعي
Retinopathy	اعتلال الشبكية
Endocrinology	علم الغدد الصماء
Osteopenia	تخلخل العظام

a) Arabic

90-100 % 70-89 % 50-69% Less than 50 % 0%

b) English

90-100 % 70-89 % 50-69% Less than 50 % 0%

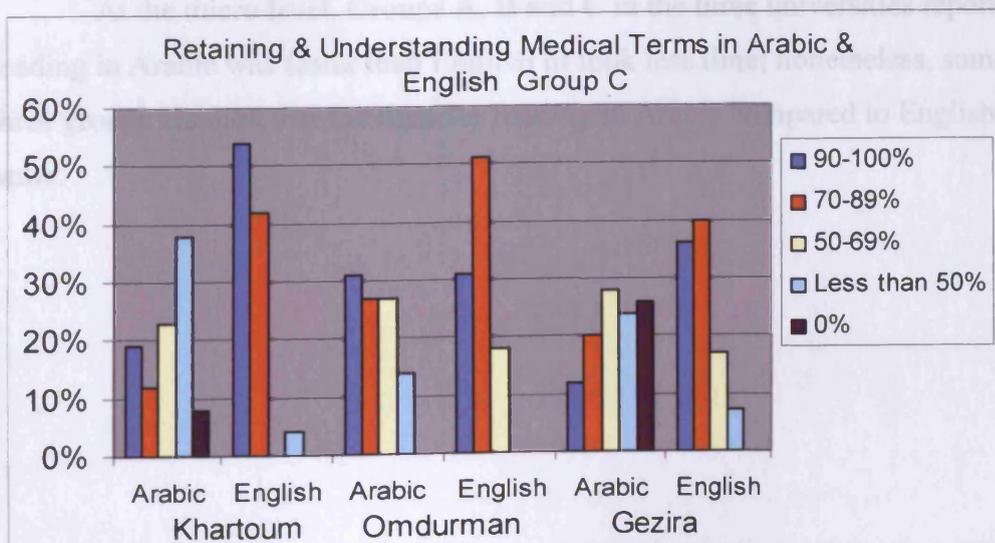
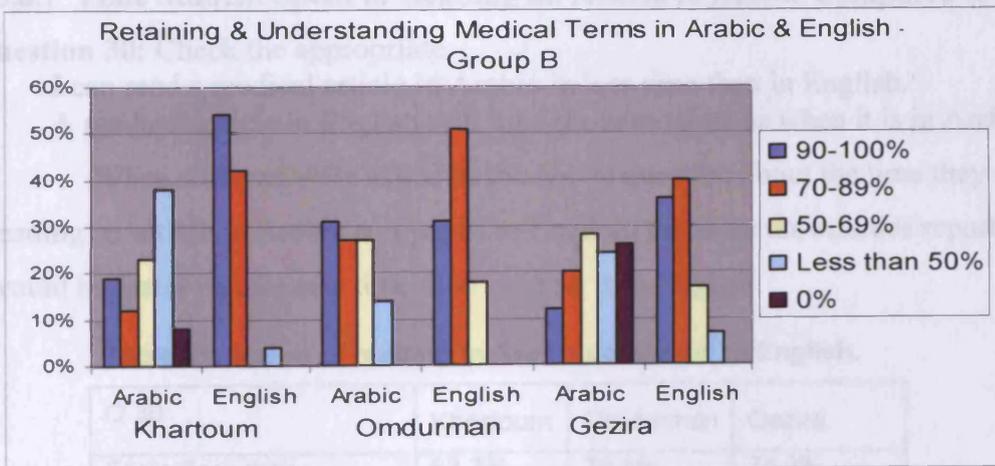
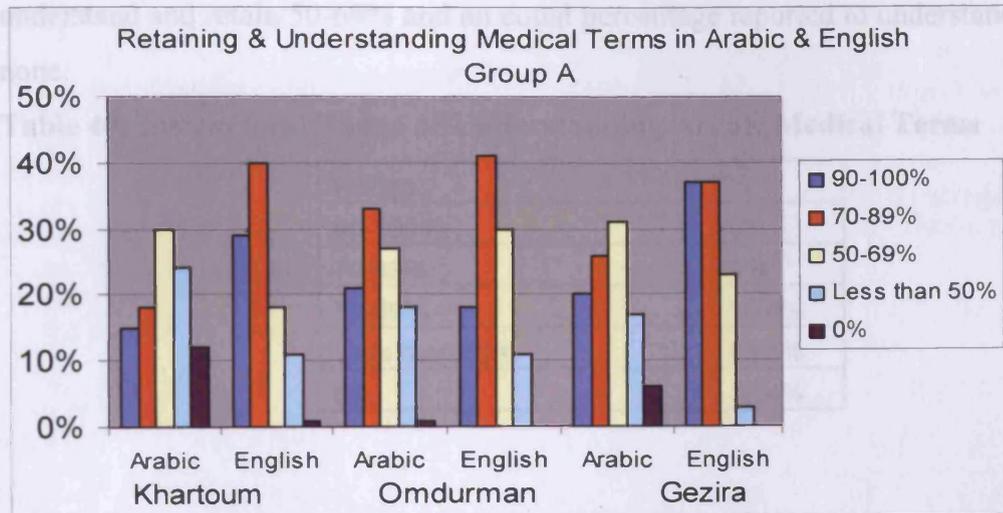
The above question aimed to check percentages of understanding and retaining terms given in either Arabic or English. Khartoum (34.3%) and Omdurman (21.6%) reported that they understand and retain less than 50% of the Arabic medical terms while Gezira participants (26.5%) claimed to understand at range (70-89%) which was similar to Omdurman and higher than Khartoum. The highest percentage (42.6%) of understanding and retaining English medical terms was reported by Khartoum participants who showed to understand and retain 90-100%. They are followed by 41.8% of Omdurman who claimed to understand and retain 70-89% of the English medical terms. 39.6% of Gezira participants reported to understand and retain 70-89% of the English medical terms. (See Table 39)

Table 39: Understanding & Retaining medical terms in:

Q41	Khartoum		Omdurman		Gezira	
	Arabic	English	Arabic	English	Arabic	English
90-100%	11.8%	42.6%	23.5%	30.7%	20.4%	35.8%
70-89%	15.7%	39.7%	26.1%	41.8%	26.5%	39.6%
50-69%	27.5%	11.8%	26.1%	22.2%	25.8%	18.1%
Less 50%	34.3%	5.4%	21.6%	5.2%	24.2%	6.5%
0%	10.8%	0.5%	2.6%	0.0%	3.1%	0.0%

At the micro level, the patterns of responses for Arabic compared to those for English were almost the same. A claim of understanding none was only shown in the case of Arabic. Many of Group B of Khartoum and Gezira reported to retain and understand medical terms in both languages at less than 50%.

Chart 49: Understanding & Retaining Medical Terms in Arabic & English



The highest percentage (54.5%) for instructors claimed to understand or retain less than 50% of the Arabic medical terms. 36.4% of the instructors showed to understand and retain 50-69% and an equal percentage reported to understand and retain none.

Table 40: Instructors' Range of Understanding Arabic Medical Terms

Range	%
90-100%	0%
70-89%	0%
50-69%	36.4%
Less than 50%	54.5%
0%	36.4%

5.6.7 Time Student Spent in Reading an Article in Arabic Compared to English

Question 30: Check the appropriate

I can read a medical article in Arabic in less time than in English.

A medical article in English will take the same time as when it is in Arabic.

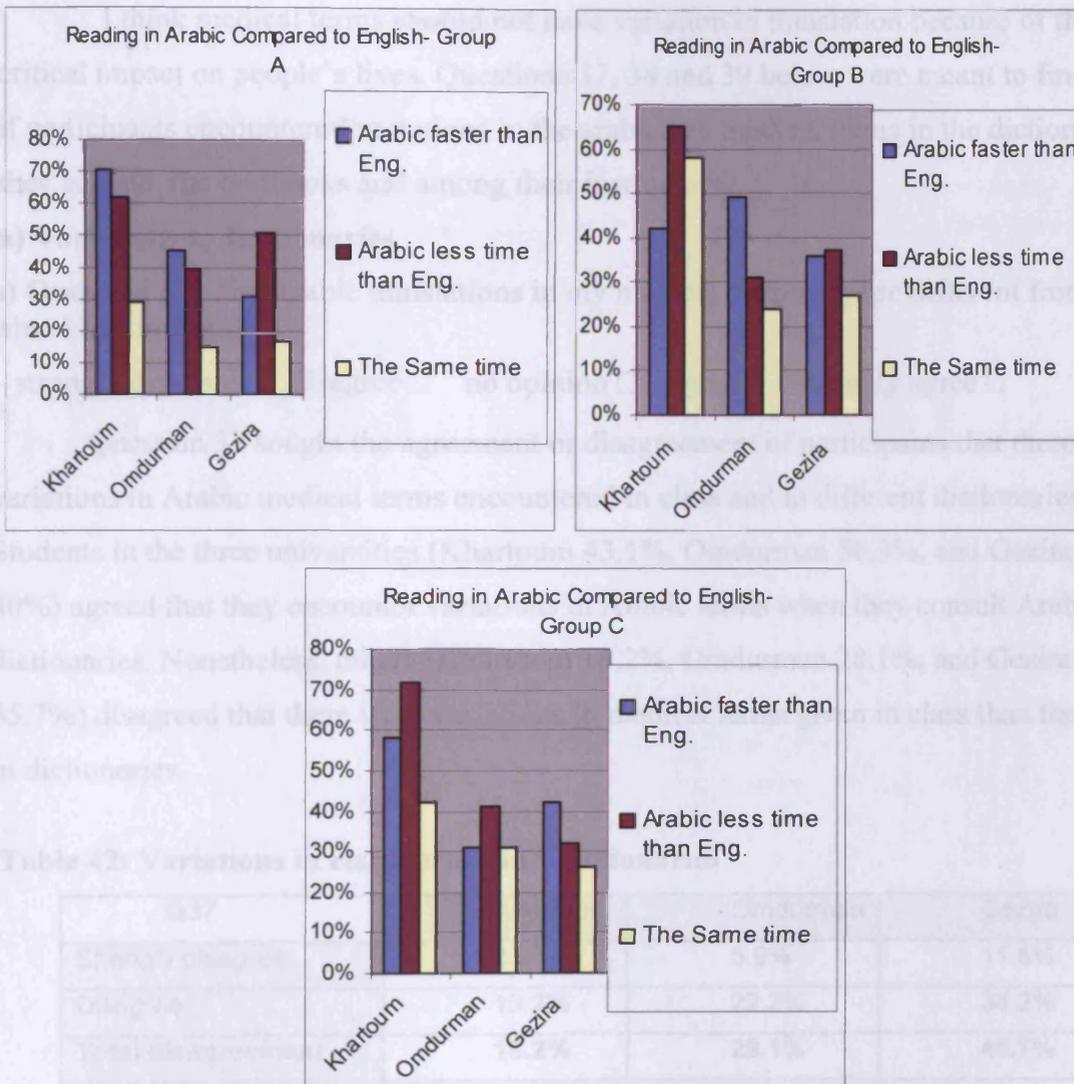
When students were asked in the above question about the time they spent in reading an article in Arabic compared to English, the three universities reported that it would be faster or take less time than reading it in English.

Table 41: Speed of reading in Arabic compared to English.

Q 30	Khartoum	Omdurman	Gezira
Faster/less time	63.7%	79.1%	74.3%
Same time	36.3%	20.9%	25.7%

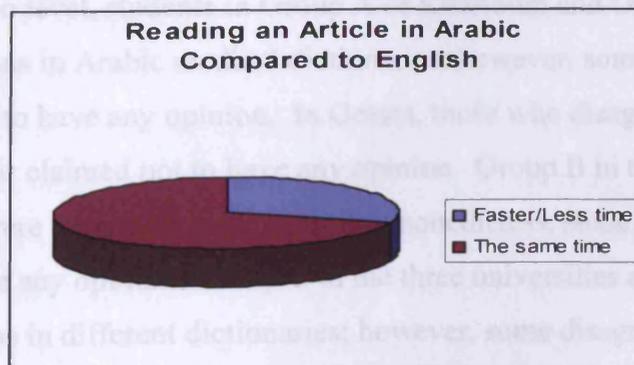
At the micro level, Groups A, B and C in the three universities reported that reading in Arabic was faster than English or took less time; nonetheless, some in the three groups claimed that the time for reading in Arabic compared to English was the same.

Chart 50: Speed of Reading in Arabic Compared to English-Groups



27.3% of instructors claimed to read articles in Arabic faster or in less time than in English. However, 63.6% of them reported the time to be the same in reading an article in Arabic or English.

Chart 51: Speed of Reading in Arabic Compared to English- Instructors



5.6.8 Variations in Arabicized Medical Terms

I think medical terms should not have variation in translation because of their critical impact on people's lives. Questions 37, 38 and 39 below were meant to find out if participants encountered variations in the arabicized medical terms in the dictionaries they consult, the textbooks and among their instructors.

a) Variations in Dictionaries

a) **Question 37:** The Arabic translations in my medical dictionary are different from what I had in class.

strongly disagree disagree no opinion agree strongly agree

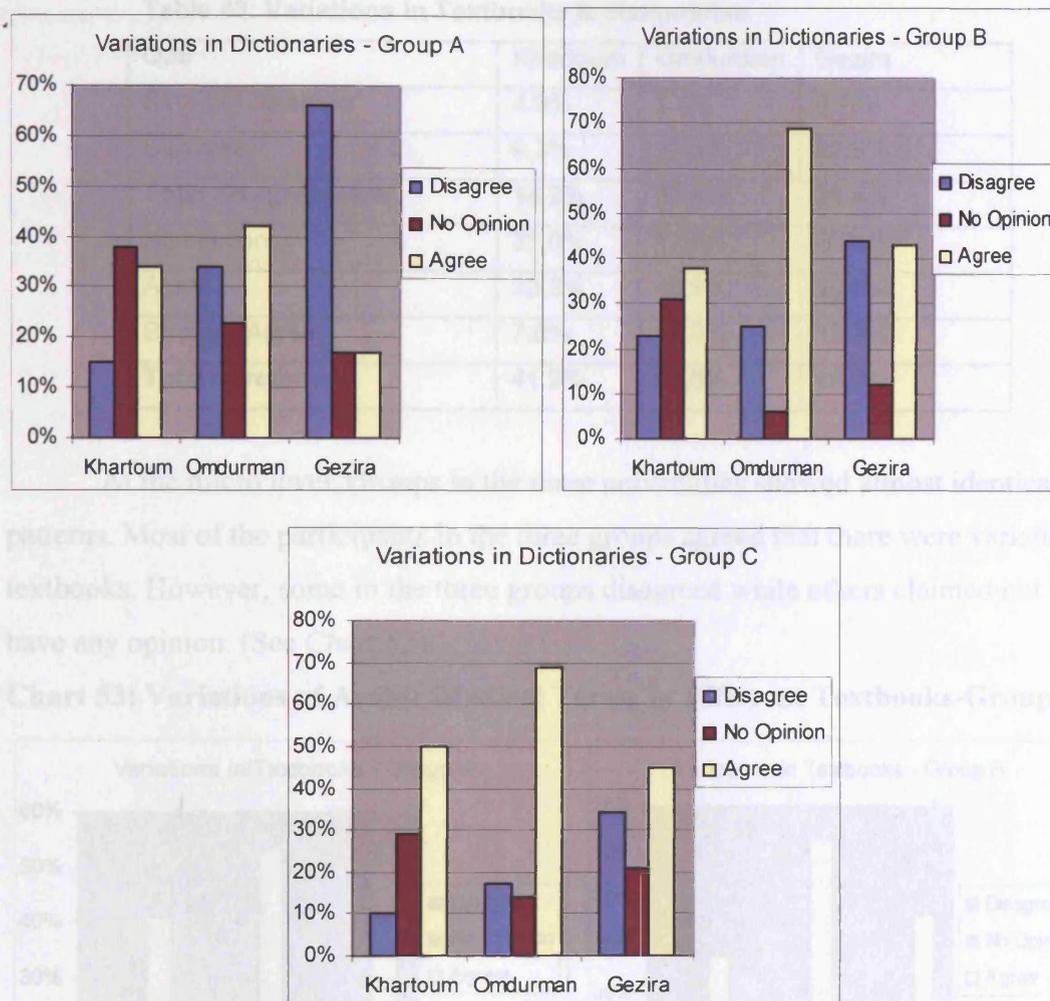
Question 37 sought the agreement or disagreement of participants that there were variations in Arabic medical terms encountered in class and in different dictionaries. Students in the three universities (Khartoum 43.1%, Omdurman 56.3%, and Gezira 40%) agreed that they encounter variations in Arabic terms when they consult Arabic dictionaries. Nonetheless, others (Khartoum 15.2%, Omdurman 28.1%, and Gezira 45.7%) disagreed that there were variations in medical terms given in class than the ones in dictionaries.

Table 42: Variations in class terms and dictionaries

Q37	Khartoum	Omdurman	Gezira
Strongly disagree	2.0%	5.9%	11.5%
Disagree	13.2%	22.2%	34.2%
Total disagreement	15.2%	28.1%	45.7%
No opinion	31.4%	15.7%	14.2%
Agree	27.9%	37.3%	30.8%
Strongly agree	15.2%	19.0%	9.2%
Total agreement	43.1%	56.3%	40%

At the micro level, students in Group A of Khartoum and Omdurman agreed that they found variations in Arabic medical dictionaries; however, some disagreed and others claimed not to have any opinion. In Gezira, those who disagreed were more than those who agreed or claimed not to have any opinion. Group B in the three universities agreed that there were variations in dictionaries; nonetheless, some disagreed and others claimed not to have any opinion. Group C in the three universities agreed that they encounter variations in different dictionaries; however, some disagreed and others said they do not have any opinion.

Chart 52: Variations in Arabic Medical Terms in Different Dictionaries-Groups



b) Variations in Textbooks

Question 38: Medical term translations are different in different textbooks and dictionaries.

strongly disagree disagree no opinion agree strongly agree

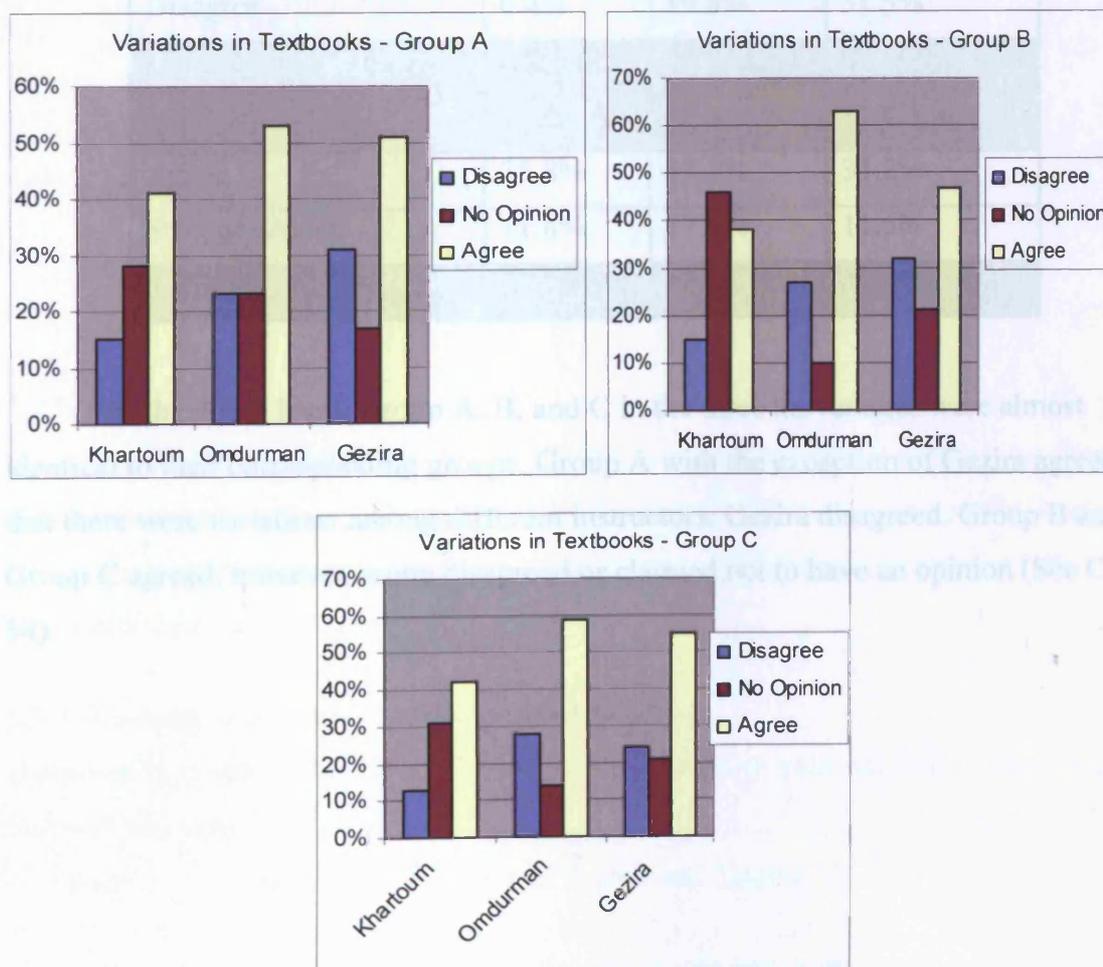
The above question explored if different textbooks and dictionaries offered different translations to Arabic medical terms. Participants in the three universities (Khartoum 41.2%, Omdurman 57.5%, and Gezira 48.8%) agreed that there were variations in textbooks and dictionaries. Nonetheless, other (Khartoum 14.2%, Omdurman 23.4%, and Gezira 30.4%) disagreed that there were variations while some of the participants (Khartoum 31.9%, Omdurman 17%, and Gezira 20.8%) claimed to have no opinion.

Table 43: Variations in Textbooks & dictionaries

Q38	Khartoum	Omdurman	Gezira
Strongly Disagree	4.9%	7.8%	8.1%
Disagree	9.3%	17.6%	22.3%
Total disagreement	14.2%	23.4%	30.4%
No opinion	31.9%	17.0%	20.8%
Agree	33.3%	40.5%	36.5%
Strongly Agree	7.8%	17.0%	12.3%
Total agreement	41.2%	57.5%	48.8%

At the micro level, Groups in the three universities showed almost identical patterns. Most of the participants in the three groups agreed that there were variations in textbooks. However, some in the three groups disagreed while others claimed not to have any opinion. (See Chart 53).

Chart 53: Variations of Arabic Medical Terms in Different Textbooks-Groups



c) Variations among Instructors

Question 39: In using Arabic to teach medicine, different instructors may use different Arabic medical terms.

strongly disagree disagree no opinion agree strongly agree

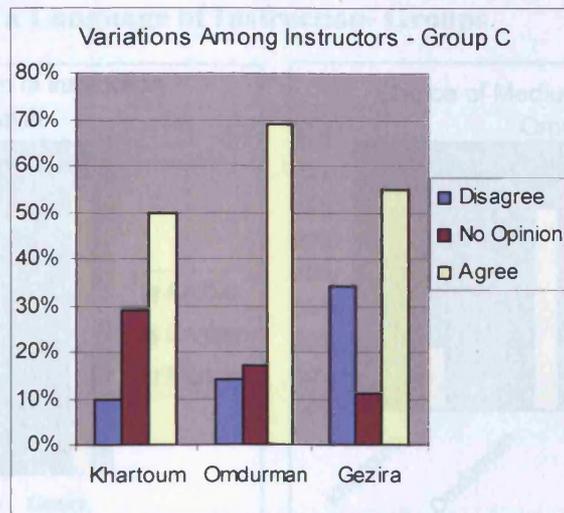
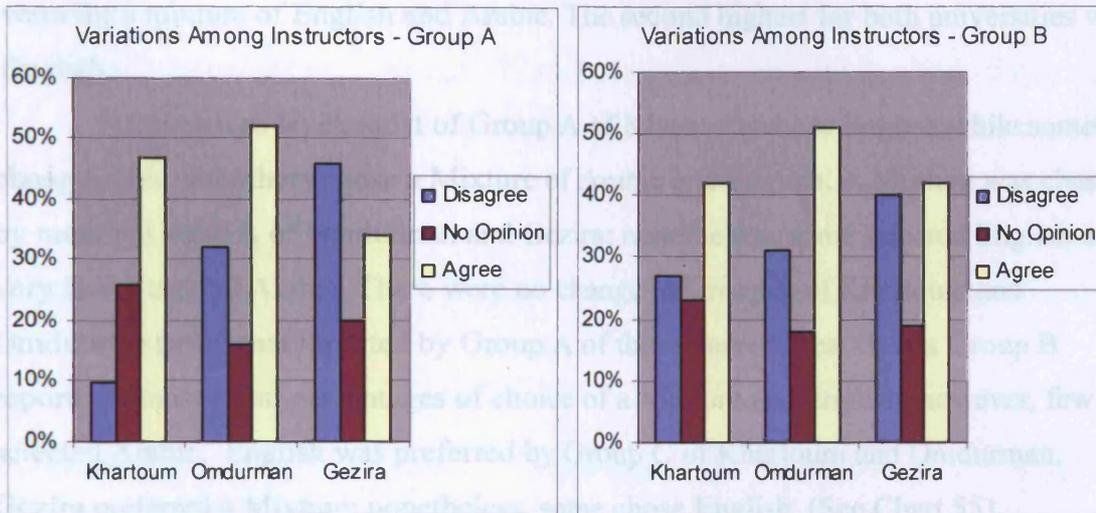
The above question asked whether they agree or disagree that different instructors may use different variations to a medical term. The highest percentages in the three universities (Khartoum 47.6%, Omdurman 54.9%, and Gezira 42.7%) showed agreement that there were variations among the instructors in using different translations for a medical term. Nonetheless, others (Khartoum 12.3%, Omdurman 28.1%, and Gezira 39.6%) disagreed while a third group claimed to have no opinion (Khartoum 27%, Omdurman 17%, and Gezira 17.7%).

Table 44: Variations among Instructors

Q39	Khartoum	Omdurman	Gezira
Strongly Disagree	5.9%	8.5%	8.1%
Disagree	6.4%	19.6%	31.5%
Total disagreement	12.3%	28.1%	39.6%
No opinion	27.0%	17.0%	17.7%
Agree	35.8%	37.3%	31.2%
Strongly Agree	11.8%	17.6%	11.5%
Total agreement	47.6%	54.9%	42.7%

At the micro level, Group A, B, and C in the three universities were almost identical to their corresponding groups. Group A with the exception of Gezira agreed that there were variations among different instructors. Gezira disagreed. Group B and Group C agreed; however, some disagreed or claimed not to have an opinion (See Chart 54).

Chart 54: Variations of Arabic Medical Terms among Instructors-Groups



5.7 Students' Language Preference

In this section, questions 2, 21, 19, 11, 24 of the students' survey explored the participants' preferred language, reaction to the magnitude of a language of instruction, using of a mixture of Arabic and English in teaching medicine, preferred kind of Arabic and preferred kind of English.

5.7.1 Students' Preferred Language of Instruction

Question 2: Given the choice of deciding the language of your medical studies, which one will you select?

Arabic English Mixture of Arabic and English

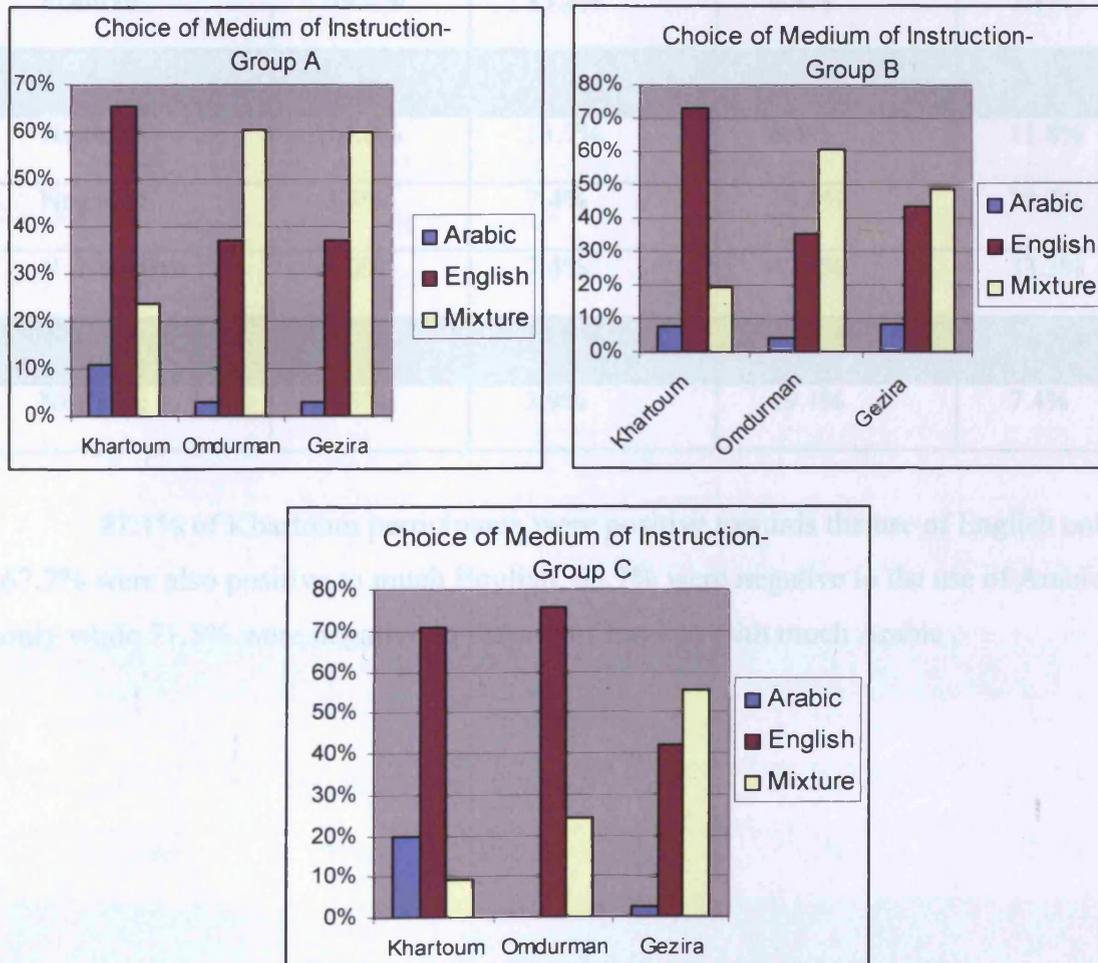
5.7.2 Students' Reaction to the Magnitude of a Language of Instruction

The above question required participants to decide on the language of instruction they preferred to be used in studying medicine. Participants of Khartoum

overwhelmingly chose English while the highest percentages in Omdurman and Gezira were for a mixture of English and Arabic. The second highest for both universities was English.

At the micro level, most of Group A of Khartoum chose English while some chose Arabic and others chose a Mixture of Arabic and English. A Mixture was chosen by most of Group A of Omdurman and Gezira; nonetheless, some selected English and very few preferred Arabic. There were no change in Group B of Khartoum and Omdurman from what reported by Group A of these universities. Gezira Group B reported almost equal percentages of choice of a Mixture and English; however, few selected Arabic. English was preferred by Group C of Khartoum and Omdurman. Gezira preferred a Mixture; nonetheless, some chose English. (See Chart 55)

Chart 55: Choice of a Language of Instruction- Groups



5.7.2 Students' Reaction to the Magnitude of a Language of Instruction

Question 21: What is your reaction if the language of teaching is one of the following?

Arabic only, English only, Much Arabic and little English, Much English and little Arabic

Very Positive Positive Neutral Negative Very Negative Not Sure

The above question aimed to explore the stance of the participants towards the suggested media of instruction.

Table 45: English Only/ Much English& little Arabic/ Arabic Only/Much Arabic & little English

Degree of Reaction	Khartoum			
	Eng. Only	Much Eng.	Arabic Only	Much Arabic
V. Positive	42.6%	31.9%	3.4%	2%
Positive	39.2%	35.8%	4.4%	7.4%
Total Positive	81.1%	67.7%	7.8%	9.4%
Neutral	10.8%	13.7%	6.4%	11.8%
Negative	3.9%	7.4%	19.6%	38.2%
V. Negative	1.0%	7.4%	47.1%	33.3%
Total negative	4.9%	14.8%	66.7%	71.5%
Not Sure	2.5%	3.9%	19.1%	7.4%

81.1% of Khartoum participants were positive towards the use of English only, 67.7% were also positive to much English, 66.7% were negative to the use of Arabic only while 71.5% were negative to the use of English with much Arabic .

Degree of Reaction	Omdurman			
	Eng. Only	Much Eng.	Arabic Only	Much Arabic
V. Positive	20.9%	44.4%	4.6%	7.8%
Positive	37.9%	34%	8.5%	6.2%
Total Positive	58.8%	78.4%	13.1%	14%
Neutral	19.6%	13.7%	7.8%	19.6%
Negative	13.1%	2.6%	35.9%	32.7%
V. Negative	7.2%	2.6%	38.6%	26.1%
Total negative	20.3%	5.2%	74.5%	58.8%
Not Sure	1.3%	2.6%	7.2%	5.2%

58.8% of Omdurman participants were positive towards the use of English only, 78.4% were also positive to much English, 74.5% were negative to the use of Arabic only while 58.8% were negative to the use of English with much Arabic .

Degree of Reaction	Gezira			
	Eng. Only	Much Eng.	Arabic Only	Much Arabic
V. Positive	29.2%	46.2%	3.1%	7.3%
Positive	35.4%	35.8%	8.8%	8.8%
Total Positive	64.6%	82%	11.9%	16.1%
Neutral	15.8%	8.8%	17.3%	25.8%
Negative	15.8%	5%	29.2%	40.8%
V. Negative	3.8%	4.2%	44.2%	17.3%
Total negative	19.6%	9.2%	73.4%	58.1%
Not Sure	0%	0%	0%	0%

The three universities were positive towards the use of English (Khartoum 81.1%, Omdurman 58.8%, and Gezira 64.6%); however, for the use of much English

and little Arabic Gezira and Omdurman gave higher percentages than Khartoum (Khartoum 67.7%, Omdurman 78.4%, and Gezira 82%) (See Table 45).

The three universities were negative towards the use of Arabic only (Khartoum 66.7%, Omdurman 74.5%, and Gezira 73.4%) or much Arabic and little English (Khartoum 71.5%, Omdurman 58.8%, and Gezira 58.1%). (See Table 45)

Instructors showed equal support for the choice of English only (45.5%) and much Arabic mixed with little English (45.5%). They were less supportive for much English mixed with little Arabic and even much less support for Arabic only. 36.4% of the instructors were negative towards the use of Arabic only and 18.2% were negative towards the use of much Arabic mixed with little English. Added to these were 9.1% who refused the use of English only. (See Table 46)

Table 46: Instructors' Reaction to Medium of Instruction.

Degree of Reaction	Arabic Only	Much Arabic	Eng. Only	Much Eng.
V. Positive	18.2%	0.0%	18.2%	9.1%
Positive	9.1%	45.5%	27.3%	27.3%
Total Positive	27.3%	45.5%	45.5%	36.4%
Neutral	9.1%	9.1%	27.3%	27.3%
Negative	36.4%	18.2%	9.1%	0.0%
V. Negative	0.0%	0.0%	0.0%	0.0%
Total Negative	36.4%	18.2%	9.1%	0.0%
Not Sure	0.0%	9.1%	0.0%	9.1%

5.7.3 Use of a mixture of Arabic and English in Teaching Medicine

Question 19: A lecturer should use a mixture of Arabic and English in delivering his lecture.

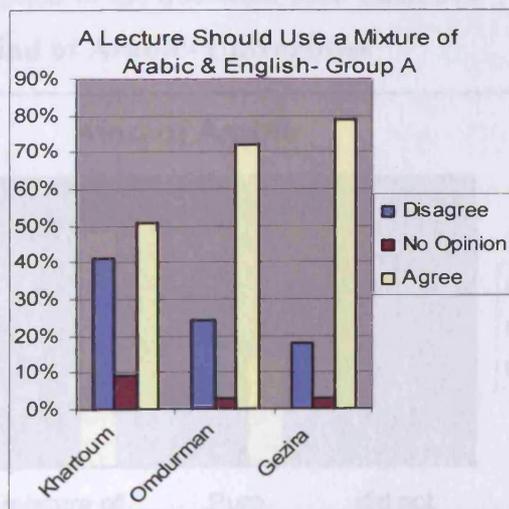
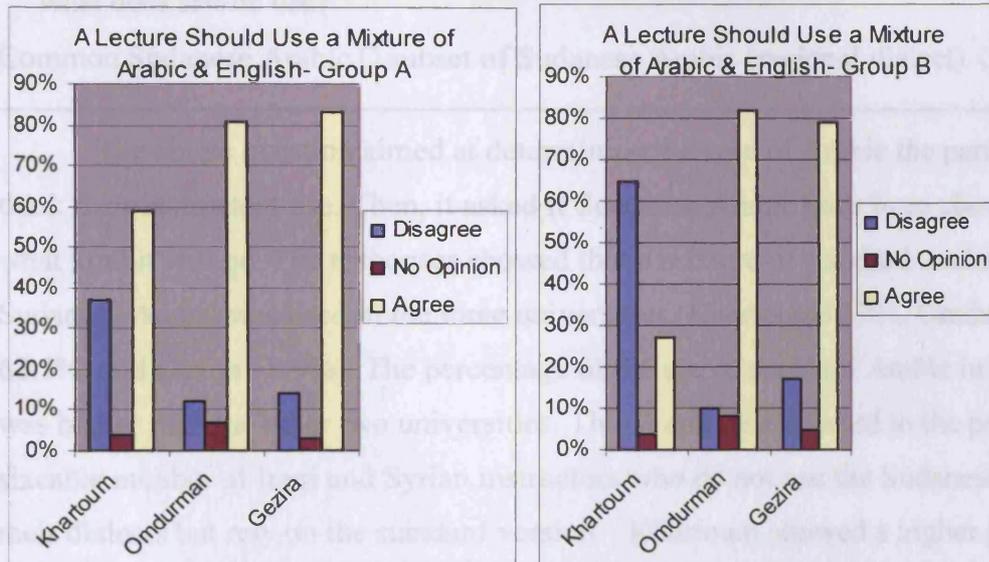
strongly disagree disagree no opinion agree strongly agree

Question 19 sought the reaction of participants to the statement 'a lecturer should use a mixture of Arabic and English in delivering a lecture.' The responses to this question confirmed the findings to questions 2 and 21 about the use of a mixture (question 2) or in other words the use of much English with little Arabic (question 21). Participants in the three universities showed an overwhelming support for the use of a

mixture of English and Arabic. The support magnitude of Omdurman and Gezira was higher than Khartoum.

At the micro level, Group A, B and C in the three universities with the exception of Group B of Khartoum were supportive that a lecture should use a mixture of Arabic and English. Group B of Khartoum and some others in the different groups disagreed. Very little numbers in the three groups claimed not to have an opinion. (See Chart 56)

Chart 56: Use of Mixture of Arabic & English- Groups



Responses to the second part of the question showed the importance of the Sudanese common language, the language of Central Sudan (Khartoum 45.2%, Omdurman 33.3%, and Gezira 25.8%). (See Chart 58)

5.7.4 Students' Preferred Kind of Arabic

Question 11: In case of using Arabic in teaching medicine, what kind of Arabic may your teachers use?

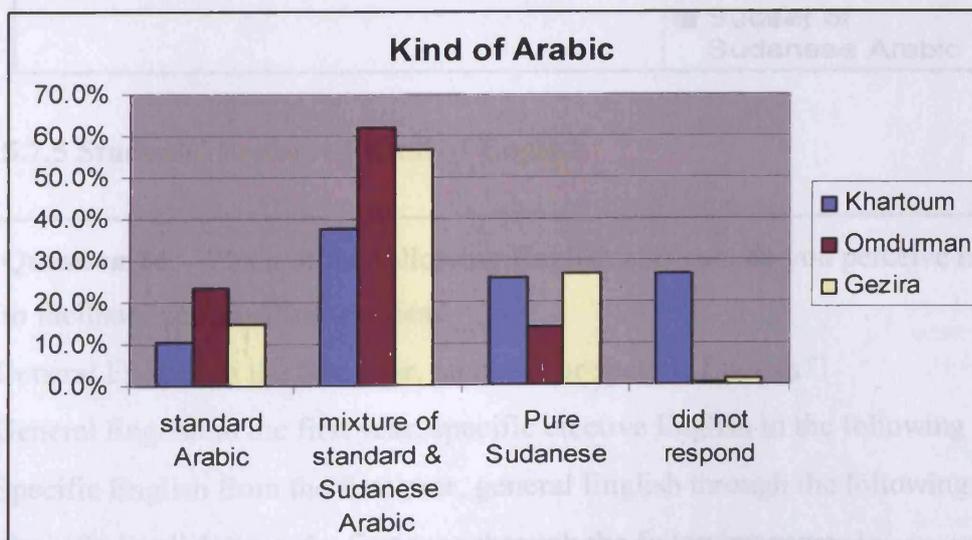
Standard Arabic Mixture of Standard Arabic and Sudanese Arabic Sudanese Arabic

-If Sudanese Arabic is your teacher's medium of instruction, what does she/he use?

Common Sudanese Arabic subset of Sudanese Arabic (regional dialect)

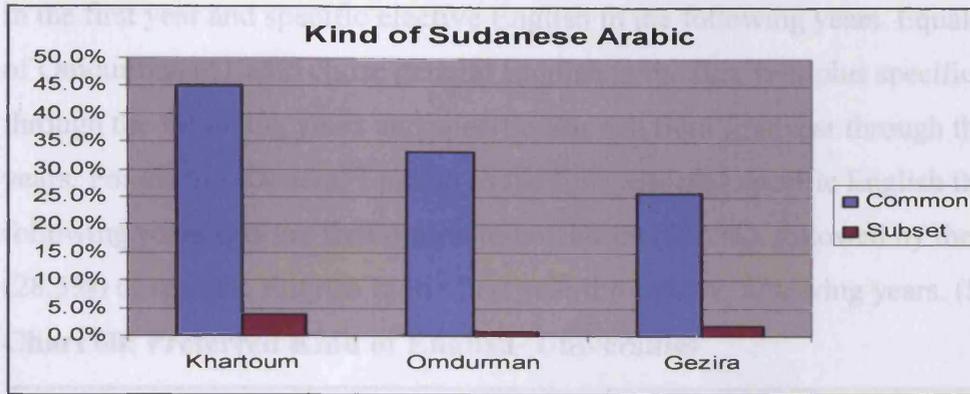
The above question aimed at determining the type of Arabic the participants think their instructors use. Then, it asked if Sudanese Arabic have been chosen, then, what kind it will be. The responses showed that a mixture of standard Arabic and Sudanese Arabic was used in the three universities (Khartoum 37.7%, Omdurman 62.1%, and Gezira 56.9%). The percentage of the use of standard Arabic in Omdurman was higher than the other two universities. This is can be attributed to the presence of a sizeable number of Iraqi and Syrian instructors who do not use the Sudanese Arabic or their dialects but rely on the standard version. Khartoum showed a higher percentage of those who did not respond to the question. (See Chart 57)

Chart 57: Preferred Kind of Arabic- Universities



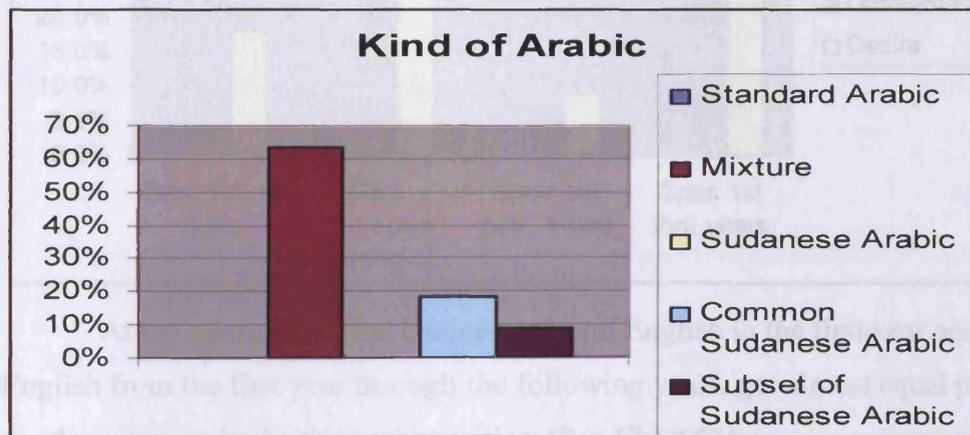
Responses to the second part of the question showed the dominance of the Sudanese common language, the language of Central Sudan (Khartoum 45.2%, Omdurman 33.3%, and Gezira 25.8%). (See Chart 58)

Chart 58: Kind of Sudanese Arabic- Universities



The responses of instructors were congruent to the students. 63.6% of them chose the mixture of Standard Arabic and Sudanese Arabic and they preferred the common Sudanese Arabic. (See Chart 59)

Chart 59: Kind of Arabic – Instructors



5.7.5 Students' Preferred Kind of English

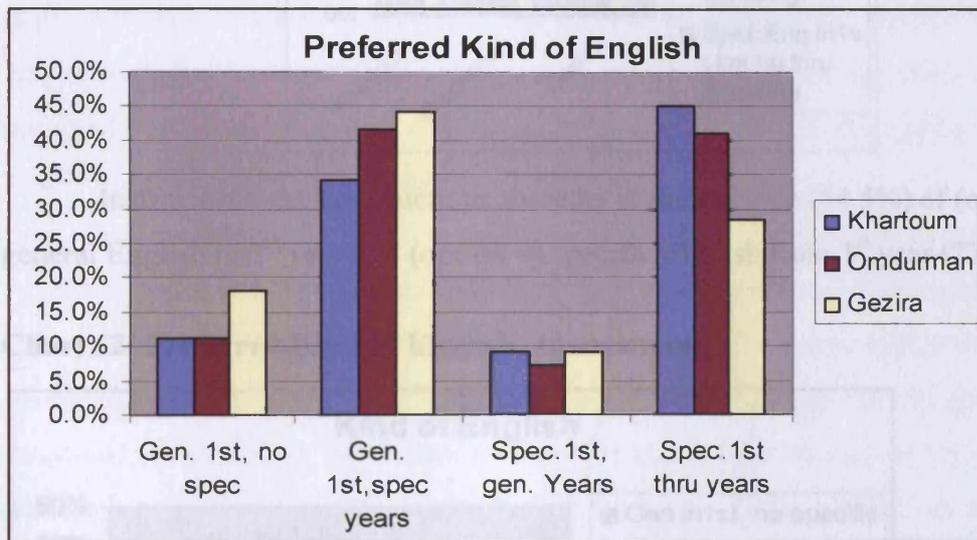
Question 24 Which of the following English curricula do you perceive is the best one to facilitate your medical studies?

- General English in the first year, no need for specific English
- General English in the first year, specific elective English in the following years
- Specific English from the first year, general English through the following years
- Specific English from the first year through the following years

The above question explored the type of English the students preferred to receive in their studies of medicine. Participants in the three universities differed in their choices. The first choice for Khartoum participants (45.1%) was specific English from

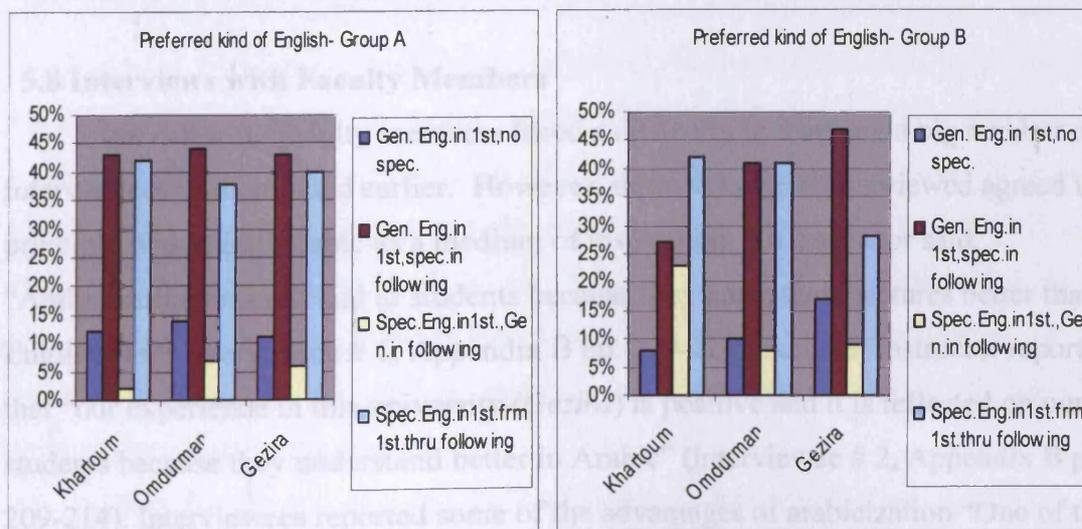
first year through the following years. The second choice (34.3%) was general English in the first year and specific elective English in the following years. Equal percentages of Omdurman (41.8%) chose general English in the first year plus specific English through the following years and specific English from first year through the following years. For Gezira, General English in the first year plus specific English through the following years was the first option to be chosen (44.2%), followed by the choice (28.5%) of specific English in the first year through the following years. (See Chart 60)

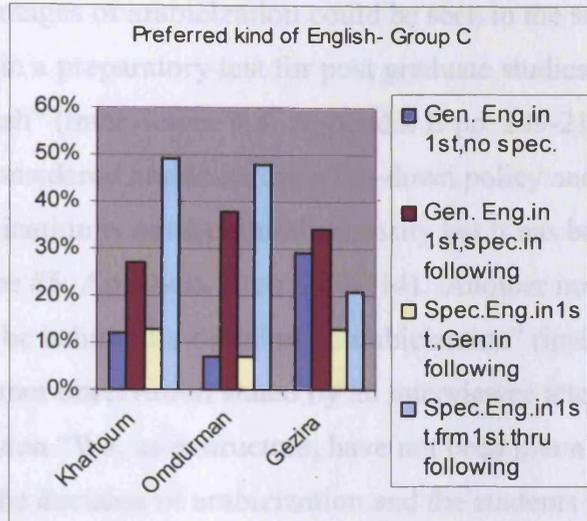
Chart 60: Preferred Kind of English- Universities



At the micro level, the choices, general English in the first year and specific English from the first year through the following years, got almost equal percentages in the three groups in the three universities. (See Chart 61)

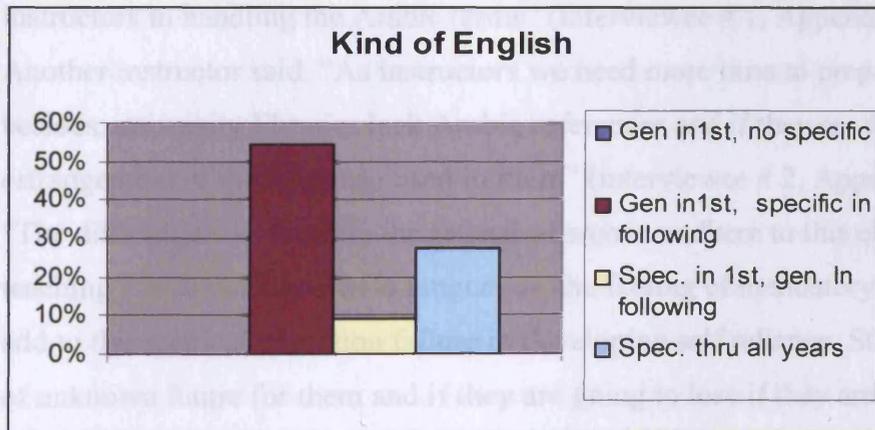
Chart 61: Preferred Kind of English- Groups





Instructors were congruent to students in their choice (54.5%) of (option 2) general English in 1st year and (option 4) specific English from 1st year (27.3%).

Chart 62: Preferred Kind of English- Instructors



5.8 Interviews with Faculty Members

Interviewing faculty members faced a difficulty in reaching a big number of interviewees as mentioned earlier. However, those who were interviewed agreed in principle with using Arabic as a medium of instruction. An instructor said, “Arabicization is beneficial to students because they understand lectures better than in English” (see interviewee # 1, Appendix B pp. 209-214). Another instructor reported that “our experience in this university (*Gezira*) is positive and it is reflected on our students because they understand better in Arabic” (interviewee # 2, Appendix B pp. 209-214). Interviewees reported some of the advantages of arabicization “One of the advantages of arabicization is the depth of the students' understanding of the Arabic

medical term due to the denotation of Arabic term” (interviewee # 2, Appendix B pp. 209-214). “The advantages of arabicization could be seen in the success of the university graduates in a preparatory test for post graduate studies over those whose studies were in English” (interviewee # 4, Appendix B pp. 209-214). Notwithstanding, some interviewees considered arabicization a top-down policy and a political issue. “The drive for arabicization is not a cultural necessity but it has been driven by political interests” (interviewee #5, Appendix B pp. 209-214). Another instructor said, “A political drive might be behind the decision of arabicization” (interviewee #2, Appendix B pp. 209-214). Another observation stated by an interviewee attests that arabicization was a top down decision “We, as instructors, have not been given a chance to get involved in making the decision of arabicization and the students were not oriented to accept the change” (interviewee #1, Appendix B pp. 209-214).

Interviewees reported the obstacles that face the implementation of arabicization “...but there are some problems like scarcity of Arabic references and terms in Arabic are not consistent. There are various differences among books in Arabic and among the instructors in handling the Arabic terms” (interviewee # 1, Appendix B pp. 209-214). Another instructor said, “As instructors we need more time to prepare lessons in Arabic, besides, university libraries lack Arabic references and if they are found, we face the estrangement of the language used in them” (interviewee # 2, Appendix B pp. 209-214). “The difficulties we face are the refusal of some to adhere to this change, difficulty in teaching due to deficiencies in languages, the feeling of mandatory of the change and add to this medical education failure in developing self reliance. Students are also afraid of unknown future for them and if they are going to lose if they are considered second to those trained in English” (interviewee # 5, Appendix B pp. 209-214). “...there are the problems, for example, many varieties for an Arabic medical term, deterioration of English, students who sat for special Arabic which indicates their low competency in Arabic. In addition to the feeling of the students that not all instructors are in favor of arabicization, the inconsistency and sarcasm they experience under the supervision of senior physicians trained in English” (interviewee # 6, Appendix B pp. 209-214).

In a nutshell, this chapter showed that some participants responded in the questionnaire using a different language from what was expected and which raised a concern that Chapter Six discusses.

Then, the chapter included the participants’ awareness of the extent of use of languages of instruction and their attitudes towards them. Participants reported that they

have their reading assignments in English while their instructors showed that they assign them readings in English and Arabic. Most of the participants said their textbooks are in English and some reported to have Arabic ones. They reported not to use Arabic in writing or communication and they claimed that English is always/often used in writing reports and research. They differed in the language of instruction used in lectures and tests. Khartoum participants showed high percentages for using English for both activities while Gezira and Omdurman reported to use a mixture of English and Arabic for the same activities. The three universities were also different in reporting the language of instruction used in bedside-teaching and labs. Gezira differed from the other two universities and showed high percentage for use of a mixture in bedside-teaching and labs. Khartoum and Omdurman participants reported high percentage for use of English in these two activities.

Participants in the three universities perceived English used in lectures and clinical rounds to be easy to follow. However, some considered English as lacking clarity. Instructors confirmed that students consider the English used in lectures and clinical rounds to be easy. A clear feature of the responses from Group C in the three universities is that they find the use of English in lectures and clinical rounds 'easy'. This may be attributed to the wide exposure of Group C to English through the years they have spent in college.

The chapter also highlighted the readiness and preparation of the participants to use English in their medical studies. Participants showed a high awareness of the importance of English for their current studies and future career. A noticeable percentage of the participants did not consider any assistance of the English they had in high school to their current medical studies. However, some reported minimal assistance to the high school English in their current medical studies. Participants also showed agreement that first year English should be relevant to their medical studies and the range of relevancy to be 70-89% and 90-100%.

Next, the chapter explored the difficulties that participants had encountered. They highlighted their deficiencies in Arabic as limited vocabulary and poor grammar and in English as poor speaking, limited vocabulary, slow reading, poor listening comprehension and poor writing. Nonetheless, participants claimed ability to ask questions and convey ideas in English in class.

The rest of the chapter highlighted the advantages and the disadvantages of English and Arabic as languages of instruction. Participants differed in comparing the

time spent in studying or preparing in Arabic and English. Omdurman and Gezira showed the time needed when the material is in Arabic to be less while Khartoum claimed the time needed is more. Also Omdurman and Gezira participants reported to capture more notes in Arabic than English. Nonetheless, Khartoum participants contradicted them and reported that they capture more notes in English. Participants in the three universities showed that they have enough or even more than enough reference resources in English while the Arabic references are not enough or there are none. They said they experience difficulties in consulting English medical references and the source of these difficulties is language-related and terminology-related.

Participants reported that the need for English is for understanding medical references, Internet, medical articles, studying abroad and attending seminars and conferences. Khartoum participants reported to understand medical English in lectures and clinical rounds much better than Gezira and Omdurman participants. The percentage of medical terms in a page of a textbook was reported differently by the participants of the three universities. A chosen language of instruction was reported to require trained instructors, textbooks, references and an ongoing translation and updating mechanism. Participants considered less than 50% of their instructors to be positive and supportive to the arabicization process.

Participants differed in attributing reasons for the selection of Arabic as a language of instruction in teaching medicine. Khartoum and Omdurman participants considered the reasons to be: empowerment of Arabic, cultural identity and political factors while Gezira participants pointed at the socioeconomic, pedagogical and cultural identity as the main reasons. Participants also differed in ascribing Arabic the ability of accommodating medical terms. Some of them saw Arabic as capable of producing medical terms while others disagreed. More than 50% of them admitted to face difficulties in understanding arabicized medical terms and they attributed the source of these difficulties to the presence of uncommon Arabic words and poor and verbatim translation.

Participants showed different ranges of understanding and retaining medical terms in English and Arabic. Also, they reported that reading an article in Arabic is faster or takes less time than in English. Then, they claimed there were variations in Arabic medical terms in dictionaries, textbooks and among instructors.

Participants in Khartoum preferred English as a language of instruction in teaching medicine while Omdurman and Gezira preferred a mixture of Arabic and

English. The preferred Arabic was a mixture of standard Arabic and common Sudanese Arabic while the preferred English was general English in first year and specific one in the following years or specific English in first year through the rest. The following chapter discusses and elaborates on these results.

The chapter concluded with what interviewees' views on the arabicization process, their involvement, and the encountered problems. The chapter has displayed the gathered data and raised the issues that the following chapter discusses and elaborates on. Chapter Six discusses the findings after they have been grouped on relationship basis.

Chapter Six

Discussion

The study aimed at answering the following research questions mentioned earlier in the introduction:

5. What are the language plans and language policies set to adopt Arabicization in higher education in the Sudan?
6. What are the advantages and disadvantages of using Arabic or English as a medium of instruction in teaching medicine in the medical colleges of the universities of Khartoum, El-Gezira (Wad Medani) and Omdurman Islamic University?
7. What are the perceptions that medical college students and faculty members at the universities of Khartoum, El Gezira and Omdurman Islamic University have about Arabicization and its implementation?
8. To what extent does the rejection of Western thoughts, practices, languages and 'unacceptable' political standpoint affect the language planning and decisions?

The results reported in Chapter Five were grouped in subheadings to help in understanding the language policies, advantages and disadvantages of the language used and the perceptions of the participants about these language policies. This chapter commences on discussing in detail these results, highlighting and presenting arguments under the following sub-headings:

- 6.1 The role of languages of instruction for medical students
- 6.2 Using English only for medical students
- 6.3 The preparedness of the students to utilize English skills in medical studies.
- 6.4 Using Arabic only in teaching medical students
- 6.5 Students' preferences for a language of instruction

Then, the discussion is furthered to cover the Arabic language of science showing its characteristics to accommodate medical terms.

- 6.6 What is Arabic Scientific Language?

6.1 The role of languages of instruction for medical students

Participants in Khartoum, Omdurman and Gezira universities reported English or mixed English/Arabic as languages of instruction in the medical colleges. Instructors assigned students English textbooks and references to read, though lectures were conducted in mixed English/ Arabic. The magnitude of English used in lectures depended on the instructor's language competency or the students' level of English. Most of the textbooks and references were in English and very few books were in Arabic in some universities, for example Gezira. This shows that the universities failed to avail textbooks and references in Arabic which are an essential part of the arabicization process. Also an extensive use of English in writing research reports and in oral communication was reported with different emphasis in the three universities. Gezira University showed some use of Arabic and this was due to the support given to arabicization in this institute. Tests were not different from the prevailing pattern of use of English in different medical activities in Khartoum University. However, Omdurman and Gezira universities used mixed Arabic/English and this is also because of the firm stand of these universities in supporting arabicization. The results also showed that English was dominant in bedside teaching (clinical rounds) and labs except in Gezira where mixed Arabic/English was reported to be the major.

The results reflected dominance of English in many medical activities in the three universities. Notwithstanding, the State language policy requires Arabic as a language of instruction in these colleges. The current situation as reported by participants showed that English was the dominant language in Khartoum Medical College and the State language policy was not in place. I contend that the University of Khartoum wanted to preserve the image of a European model since it started as Kitchener school of medicine. Thus, the medical college froze the State policy; nevertheless, they used mixed Arabic/English due to the poor English level of the incoming students. The medical colleges of Omdurman and Gezira where Arabic only was supposed to be the language of instruction per the State policy used mixed Arabic/English. To be precise, mixture refers to the use of English terms accompanied by non Standard English mixed with some Arabic phrases. I think the danger of such use is that it does not expose students to the standard versions of English or Arabic and thus students will not have the chance to master either of these languages. Fluency in English or Arabic will be affected by the impact of this distorted type of language. In addition, it does not assist the students in promoting their writing skills and thus limit

their future contribution to the medical knowledge. However, in the literature it is reported that the use of a mixture does not harm but on the contrary it can be of great help to students in understanding different concepts.

However, I believe that deficiency in a language will never enable students to acquire new knowledge from sources in English other than their instructors whose proficiency in the language is either low or deteriorating in the process. "Some Sudanese doctors cannot pronounce properly" (students' comments # 5, Appendix D pp. 220-229). In the current situation, the use of a mixture will result in a negative impact on Standard English and Standard Arabic. It will hamper the development of Arabic language to have new conceptual roles, or adding to scientific knowledge due to the lack of proficiency among the graduates.

Most of the three universities' participants perceived the English used in lectures and bedside-teaching as easy. Nonetheless, some considered it to lack clarity (see 5.2.4 in Chapter Five). This concern raised from some of the participants does not specify the type of English that lack clarity, the common language or the medical terms. As a matter of fact, medical English includes terms of Latin or Greek origin. Knowledge of the roots that forms a medical term can be of great help to a student of medicine to elicit meanings; otherwise comprehension of such terms will be cumbersome. European students of medicine have assistance from their native languages which have connection to Latin and Greek. Non-European students lack this advantage and thus face difficulties in analyzing terms to figure out their meanings (Thirumalai, 2003).

Incoming students to the three universities had their pre-university education in Arabic. Continuation of use Arabic only was expected, nonetheless, the three universities reported minimum or absence of use of Arabic only in the following activities involved in studying medicine (see Table 47).

Table 47: The Use of Arabic Only

Activity	Khartoum	Omdurman	Gezira
Lectures	0%	4.6%	8.1%
Tests	0%	0.7%	1.2%
Bedside-teaching	0%	0%	2.7%
Labs	0%	0%	0.8%
Reports & Research	1%	1.3%	15.3%
Reading assignment	1%	2.6%	7.3%
Textbooks	0.5%	1.3%	5.4%

The three universities receive students of the same background due to the unified intake policy carried out by the Admission Office for High Education. However, in the above table, Gezira University was different from the other two universities in showing that Arabic only is used in the College of Medicine. Though this was minimal, however, it implies that there is some effort being exerted in Gezira towards the use of Arabic.

6.2 Using English Only in Teaching Medical Students

Participants (more than 90%) in the three universities perceived English as important for their current studies and future career. The faculty members (91%) showed agreement with the students that English is important for the students' current studies and future career. These results are in line with Taha's (1990) findings about the instrumental value of English in the University of Khartoum that was reported by 84% of faculty members and 76% of students. Literature informs us that these results are also in agreement with other findings, for example, Derwing et al (1978), Zughouul and Hussein (1985), Yang (1985), Fang (1987), and Guo (1987). These studies have illustrated that students realized the importance of English competence for success in their studies and future careers.

Students ascribed English high importance because they felt the need to read references, medical journals, access Internet sites; attend seminars and conferences and currently understand the English used in lectures. However, this should not imply that studying in English was easy for the students. They encountered difficulties but since there is a scarcity of textbooks and references in their mother tongue, they need English and they have to live with the situation.

The faculty considered English important in doing research, for international

conferences, encouraging creativity, enhancing language competence and writing textbooks. However, faculty members saw English as a leading factor in building loyalty to the culture of its native speakers. This loyalty is an integrated part of English studies as Pennycook (1998) attests, "there are deep and indissoluble links between the practices, theories and contexts of ELT and the history of colonialism" (Pennycook, 1998, p.19). From the vantage point of the colonized, a position which is lingering since the independence of Sudan, people try to detach themselves from the colonizer and his culture and thus considered English to conjure up the memories of colonization.

Notwithstanding, English was reported to be important for medical studies by the participants and their faculty members. However, arabicization should not be seen as being exclusive and incompatible with English. . Both languages, English and Arabic should have roles in teaching medicine. In fact, English should be an essential counterpart to Arabic in the arena of medical studies in Sudan since English is considered the international language of medicine. In examining English as international language of medicine, Maher (1986) found the dissemination and exchange of medical information in English had become not only an *international* but also *intranational* so that in countries such as Germany, Japan, and France, information is being regularly published in English for domestic 'consumption' (Maher,1986,p.216).

A realization of the need for English is shown in the studies on arabicization. For example, Mahmoud (1985) in Taha's study has pointed out with reference to Khartoum University, that the position of a foreign language is as critical as the position of Arabic for the process of arabicization (Taha, 1990, p.300). The need for a foreign language necessitates preserving English status in Sudan even if arabicization is fully implemented. Arabicization should not lead to eliminate or belittle the role of English in higher education. It is not feasible that English will face what is called "linguistic genocide" that is to say it will not be eliminated in higher education. This is because English is well situated in the Sudanese culture. It is the second language of the southern part of the Sudan and is the lingua franca of the elites of the south. Added to that, one can not ignore the indispensable role and dominance of English in the domains of international academic relations and other forms of international information transfer (Pennycook, 1994). English is also important to Sudan since it is a means of access to continental (African English speaking countries) and international communication.

This section highlighted the need and importance of English. However, the question to be asked is whether the students were equipped with the English skills that they can utilize in their college studies or not. The following section discusses that.

6.3 The Preparedness of the Students to Utilize English Skills in Medical Studies.

When students were asked if they found the English they had in high school of help in understanding the English needed in college medical studies, their responses varied. Some of them claimed that they did not feel any significant contribution of the English they studied in high school to their understanding of their current medical studies.

Faculty members also reported varied views about the contribution of high school language preparation of students for their college studies. Some of them claimed unawareness of the impact, others did not see it as a help while a third group considered it of minimal contribution to understanding the current studies.

When the language of instruction changes from a school stage to another, it is expected to pose a difficulty unless some preparation is done to secure a smooth transition to the new language. The literature about such language change informs us that the major obstacle that incoming students encounter is the language medium (See Douglas, 1977, 1986; Andrews, 1983; Mustafa, 1985).

In Sudan, there is a mismatch. The State language policy states that Arabic is the language of instruction in general and higher education. Nonetheless, this was not the reality in higher education where arabicization is not completely implemented. Thus, the incoming students, freshmen in the medical college experience the effects of the switch they make from Arabic medium in high school to English or mixed English/Arabic. In this regard, Taha reported that it has been indicated "that students develop strategies such as rote learning and teaching becomes dominated by examination oriented practice and the spoon feeding strategies. For some students, the consequences may even be dismissal from the University" (Taha, 1990, p.292). Add to this pedagogical concern, the difficulties the students face in using English. For example, one of the senior students wrote a comment on the questionnaire saying "there is a psychological barrier between you and a language which is not yours" (see comment # 33 Appendix D pp. 216-219). This feeling of English alienation and disconnection from the need of the community de-motivates learners of the foreign language unless some effort is done to build a positive attitude in the learner.

Universities have formed units for English for special purposes (ESP) to help

students in their current studies. I think, even in the time when what Daffalla, the late Vice Chancellor of Khartoum University described as should be the "ultimate goal" (cited in Taha, 1990, p.292) in universities, to teach in Arabic, the mother tongue of most of the students, these units should assume a bigger role in promoting the development of English to arm students with skills that assist them to perform the language roles identified in the second paragraph of the previous section.

The current status of students' level of English according to the survey results was moderate. Half of the Khartoum participants and less than a third of each of the other two universities, Omdurman and Gezira claimed to understand the English used in lectures and clinical rounds at the range of 90-100%. Khartoum participants showed a higher rate than the other two universities and this can be attributed to the extensive use of English in that college. Students attributed the encountered difficulties in English to be language-related that is to say they had deficiencies in skills like poor listening, poor reading comprehension and limited vocabulary. A student wrote that "In use of English, difficult terms are used, though easier ones could be used, besides, inability in pronouncing English terms properly which poses difficulties in understanding and writing" (see comment # 15 in Appendix D pp. 216-219).

Another gap in the preparation of students' English skills like reading comprehension is the absence of their awareness of the nature of medical English. Medical textbooks include general language or common words and the specific medical terms. The percentage of medical terms compared to common words in a page of a medical textbook was found to be 3% according to two studies. One was carried out in King Faisal University in Saudi Arabia by El-Subaei and the other was in the Medical College of Khartoum University, Sudan. El-Subaei chose 10 English medical references and chose 15 pages from each reference. Then, medical terms were calculated with the exception of repeats, the means for medical terms was 3.3% of the words and 96.7% were non-medical terms (See Table 48).

Table 48: Percentage of English Medical Terms

#	Topic	# of words	# of Terms	Percentage
1	Medical Microbiology	8778	308	3.5%
2	Biology	6510	98	1.5%
3	Obstetrics & Gynecology	5688	186	3.2%
4	General Pathology	5890	185	3.1%
5	Pediatric	6337	322	5.1%
6	Psychiatry	7011	280	3.9%
7	Surgery	6454	165	2.5%
8	Public Health & Preventive Medicine	8762	351	4%
9	Anatomy	10602	331	3.1%
10	. Medicine	9030	322	3.5%
Total		75062	2548	3.3%

(El-Subaei, 1995)

In the second study that was conducted at the Medical College of Khartoum in Sudan, the findings of Sahal et al were in agreement with El-Subaei's (1995). They found in their study that the percentage of medical terms in a page of a textbook was also 3% of the words in the page (personal communication, 2002). Participants in the three universities and their faculty members showed great variations when asked about the percentage of medical terms in a page of a textbook compared to common words. They were not in line with the results of the above mentioned studies. This suggests that the participants and the faculty members may have given wild guesses. It also indicates that the taught English in these colleges has not succeeded in highlighting and emphasizing the differences between medical and non-medical terms used in medical textbooks. An awareness of these differences could have helped in exerting efforts to close the gap in areas of deficiency. For example, special attention could have been given to medical terms prefixes and suffixes to help in eliciting meanings.

Participants reported that listening is the skill most needed for themselves and freshmen to improve in a language, and the writing skill is the least skill needed. Then, they showed speaking, vocabulary, and reading were their problems in English. These results are congruent with the opinions of Taiwan Medical College students which were elicited by Hiu-Uan Chia et al (Chia et al, 1997). The Taiwanese students in Chia's study showed listening as the skill most needed to be improved by freshmen and writing

is the least needed skill. They also regarded limited vocabulary, slow reading speed and poor listening comprehension to be their main English language problems (Chia et al, 1997).

Participants reported facing difficulties when English only is used. First, some participants admitted their inability to ask questions or convey ideas in a class conducted in English only. Second, participants said it is easier for them to capture more notes in Arabic than they can in English. Besides, they spend less time in preparing their studies in Arabic than in English. Third, they encounter difficulties in consulting English medical references. These problems attest that students were not equipped with the necessary skills to use English in their medical studies.

6.4 Using Arabic Only in Teaching Medical Students

Using Arabic or arabicization is a language policy that has been mandated for higher education by the National Council for Higher Education after it had been implemented in high secondary school in 1965. The study explored the awareness of the students and their faculty members of the arabicization process.

First, participants were asked whether they agree or disagree with the assumption that choosing Arabic as a language of instruction necessitates the availability of a trained instructor, textbooks, references and an ongoing translation and updating mechanism. The overwhelming agreement received indicates the awareness of the students and the faculty members of the initial needs of arabicization.

Second, participants varied in reporting the attitude of their instructors towards arabicization. Some of the students said they had no idea about the attitude of their instructors towards arabicization. Other participants showed that less than 50% of their instructors were positive and supportive towards arabicization. What could be gleaned is that the role of the faculty members in promoting arabicization was not instrumental. This has been one of the problems that slowed down the process of arabicization.

Third, the results showed that the participants perceived the main reasons for using Arabic as a medium of instruction to be empowerment of Arabic, cultural identity, political factors, socioeconomic and pedagogical reasons. However, Khartoum and Omdurman participants perceived socioeconomic and pedagogical issues as less important than did the Gezira participants. This also implies that there has not been an awareness, understanding and commitment campaigns for arabicization which led participant to be unaware of the goals of arabicization. Also, the policy of changing the language of instruction was from top down which led to latent resistance to the decision.

The faculty participants were equally distributed in reporting the reasons for using Arabic as a medium of instruction. Some of the instructors saw arabicization as a cultural necessity that is to say a need to establish a cultural identity; others saw it as a scientific necessity that is to say a need to advance in science and the third group of instructors saw both, the cultural and the scientific necessities as reasons for arabicization.

Fourth, participants' awareness of the potentiality of Arabic to form Arabic medical terms through derivation, construction, or analogy was checked in the survey. A high percentage of participants in the three universities reflected unawareness of this capability. This suggests the presence of a gap in the arabicization implementation plan. The faculty members and students should have been prepared for this language policy change. Also, resources should be available because they are very critical in the preparation for implementing arabicization. When participants were asked about the availability of medical Arabic references, they reported there were not enough or almost none. Gezira participants showed a higher percentage than the other two universities with regard to the availability of some Arabic references which reflects the efforts of the university in implementing the policy.

Fifth, participants admitted facing difficulties in understanding some arabicized medical terms. Students wrote explicitly about their difficulties as comments added to the questionnaire. "Some Terms are not known and they may be more difficult than English terms" (comment # 1, Appendix D pp. 216-219). "Some Arabic medical terms are weird e.g. *Sagab*" (comment # 3, Appendix D pp. 216-219). "The terms are not common words in Arabic" (comment # 6, Appendix D pp. 216-219). "Difficulty of understanding and pronouncing some Arabic medical terms" (comment # 7, Appendix D pp. 216-219). "Some of the Arabic words in medical books are difficult to understand" (comment # 8, Appendix D pp. 216-219). "Sometimes the translation of English terms into Arabic results in very difficult Arabic words" (comment # 10, Appendix D pp. 216-219). "Terms were translated into strange difficult forms" (comment # 13, Appendix D pp. 216-219).

Most of the participants reported to understand Arabic medical terms at the range less than 70% while their faculty members reported to understand more than 70%. Students and faculty members agreed that there were two causes for these difficulties. The use of uncommon words, for example, the medical term inflammation could be translated into the common word '*iltihab*' instead of the uncommon word brought by

the Syrians (*Al-khamaj*). The second cause was the poor and verbatim translation. The difficulties were compounded for students when they encountered variations for Arabic terms in different dictionaries. Faculty members agreed with the students that an Arabic medical term has different variations in different dictionaries. Nonetheless, a medical term should have a definite meaning since it is critical to human beings' lives. A characteristic of the scientific language is that the term has an impersonal nature and a distinctive meaning that governs its appropriateness in use. An elaboration on Arabic scientific language will be discussed later in this chapter. Not only dictionaries posed the difficulties but also Arabic medical textbooks contained variations for an Arabic medical term. This aggravated the situation since a textbook is much more used than dictionaries. Added to that, students received different terms from different instructors who are affected by the resources they consult and which have different terms.

Sixth, participants were given a list of medical terms in English and their equivalents in Arabic. The purpose was to check if the English terms and their Arabic equivalents offer assistance in eliciting their meanings. For example, if we compare from the list the medical English term 'Pectus excavation' with its Arabic equivalent '*al-Sadr al-Motakehif*' which literally says a human chest that takes a shape of a cave. Looking back at the English term, students (native speakers of English or not) miss any connotation for the words while the Arabic equivalent has a connotation to a shape that an Arabic speaker will pick easily. I think this feature will help Arabic-speaking students in forming a picture of a term which will have a good impact on understanding and retaining the medical term. An instructor who I interviewed told me about a term he had as a student, used it and taught it until he came across its Arabic equivalent when he discovered the depth of its meaning. Notwithstanding, when students were asked to show the range of their understanding and retention of terms in English and Arabic, low percentages were for Arabic while high percentages were for English. 34.3% of Khartoum participants and 21.6% of Omdurman participants reported the range to be less than 50% for Arabic while 26.5% of Gezira participants reported to understand and retain Arabic terms at the range of 70-89%. A high percentage of Khartoum participants (42.6%) reported the range of 90-100% for English while high percentages of Omdurman (41.8%) and Gezira participants (39.6%) claimed the range of 70-89% for the same language. These findings were not in agreement with the above argument that a native speaker of Arabic utilizes the connotation of the Arabic equivalent term in understanding and retention of a medical term. I think the cause for that may be due to

the familiarity of the students with the English term and the absence of exposure of Arabic terms. Another observation regarding these findings is that the Khartoum and Gezira percentage distributions suggest that there is a dominance of a language in each university.

Faculty members also differed. A high percentage of participants chose different ranges of understanding and retention. The range for Arabic was less than 50% while for English was 70-89%. This reflects the unfamiliarity of the faculty with Arabic terms, which indicates that faculty members have not been prepared to carry out the arabicization policy. The interviews with faculty members showed that there was not a set plan to equip the instructors to work for the change of the medium of instruction. The following excerpts are from the faculty members' interviews: "At our section, arabicization has been left to individual initiatives" (interviewee # 1 in Appendix B pp. 209-214), "First, instructors must be well trained to teach in Arabic" (interviewee # 5 in Appendix B pp. 209-214).

6.5 Student's Preferences for Language of Instruction

As anticipated, Khartoum participants (68.6%) preferred English when asked about their preferred language of instruction. Omdurman and Gezira participants were divided between a preference for a mixture and English. The use of Arabic only was almost neglected by the participants of the three universities. More than two thirds of each university's participants preferred not to use Arabic only or a mixture of much Arabic and little English in their medical studies. Almost 80% of Omdurman and Gezira participants and 50% of Khartoum participants saw that a lecturer should use a mixture of much English and little Arabic. Khartoum and Gezira participants when asked about the kind of Arabic their instructors preferred, they reported that their instructors preferred using a mixture of Standard Arabic and Sudanese Arabic, a variety which is a little different from the Standard. Omdurman participants reported that their instructors preferred Standard Arabic and I attribute this to the presence of the Iraqi and Syrian instructors who do not know the Sudanese Arabic. Sudanese Arabic has different variations geared to their respective regional parts of the Sudan. Participants chose the Sudanese Arabic of central Sudan, the Arabic of Khartoum which Tamim (1986) described as a high level of Sudanese Arabic and which is similar to Standard Arabic. Despite the differences among the participants in the three universities who came from different parts of the country with their regional Sudanese Arabic, they chose the Arabic of central Sudan which means the chosen kind is appealing and understandable. Faculty

members agreed with the participants that they prefer to use a mixture of Standard Arabic and the Arabic of central Sudan.

The use of Arabic as a language of instruction calls for more attention towards English as a necessity in the medical studies. The question to be asked is what kind of English to pursue. Participants in the three universities differed in their preference of the kind of English that needs to be adopted. Some of the participants (Khartoum 34.3%, Omdurman 41.8%, and Gezira 44.2%) preferred general English in the first year and specific English in the following years while others (Khartoum 45.1%, Omdurman 41.2%, and Gezira 28.5%) chose specific English from first year through the following years. Students reflected their worries about English and they were genuine in their demands for English. If English is not boosted when arabicization is fully implemented, medical student will suffer due to the expected deterioration in the standards of English and they will lack the medical knowledge which is much more available in English. Faculty members agreed with both preferences of the students of a curriculum of general English in first year and specific in the following years or specific English from first year through the following years.

This section concluded with identifying the preferred kind of English that should accompany arabicization, but what is the nature of the Arabic that represents the backbone of the arabicization process? Since the study is aiming at highlighting the advantages of the Arabic, the following section is furthering the discussion to highlight the Arabic scientific language.

6.6 What is the Arabic Scientific Language?

6.6.1 Introduction

More often than not, the concept of language and its extended use is taken for granted. For a while, let us think of the concepts underlying the definitions of the following: native language, first language, second language, mother tongue, meta-language, foreign language, business language, official language, common language, language and so on. The non-exhaustive list could go into a chapter. Nevertheless, it indicates that we characterize the means of communication on the basis of the uses. What I am interested in is the idea of the existence of a specialist language which includes the scientific language that will be discussed in the following sections.

Thirumalai (2003) sees that the common language gives rise to the specialist language when it is used in a special field where it controls and shapes the deliberations of communication activities in the field in course of time. Nonetheless, specialist

language is a language of formality which does not have a corresponding informal variety. As mentioned above, scientific language is an example of this specialist language.

The scientific language or the language of science is characterized by its accuracy which resulted from definitions, codifications or conventions that have given the words and phrases accurate meaning. This aim for accuracy and precision is accompanied by other characteristics, impersonal report, disambiguation, clarity and matter of fact style. The sphere of the scientific language is mathematics, physics, chemistry, botany, biology, medicine, microbiology, engineering, earth studies, energy and different technologies. The dominant language in this sphere is English. The study in hand is investigating the possibility of using Arabic in teaching medicine. The question that poses is does Arabic have a scientific language? In the course of answering this question, let us in the following sections highlight the characteristics of the scientific language.

In science one comes up with construction of hypotheses, designing and conducting experiments, argumentation, proof and falsification, reporting of the findings and so on. Each of these activities involves use of language. There may be differences in the quantum and kinds of language in terms of vocabulary and sentence types. Notwithstanding, such types fall in patterns that are the same for every scientist since language consists of an expression system connected with a content system. What we find in Ibn Sina's (Avicenna) scientific language is what still followed among current scientists, the strict adherence to the scientific method and language in tackling scientific issues (Shaheen, 83).

6.6.2 Creation of Scientific Terms

Arab linguists have been concerned with scientific language in Arabic when the need has arisen to adopt the heritage of Greek, Romans, Persians and Indians as detailed in the first chapters of this study. Current linguists also followed in illuminating Arabic scientific language needs (Shaheen, 83). They have written about the objective essay showing the stages of following the scientific method, collecting the data, arranging, verifying and displaying it in a clear, understandable way. They have highlighted the buildup of the scientific language and this could be seen in the study of Dr. Mohamed Kamel Husain titled *Science and Language*, which he presented to the Arab Academy in Cairo in 1965. After stating the characteristics of the scientific language, he added

that Arabic scientific language should not include literary and beautiful expressions that Arabic is famous for and sacrifice accuracy and precision. (Cited in Shaheen, 1983, p.85). The characteristics of Arabic scientific language are precise, clear, durable, and capable of endless development, synonymic nature and allow for scientific categorization. In contrast, the characteristics of the sentence are simplicity, ability to match the nature of sciences and durability (Shaheen, 83).

Then, El-Jalili in his study named *Arabic for Sciences* set the following foundations:

- 1- Finding an easy way for scientists to learn Arabic to avoid mistakes in reading and writing.
- 2- Use of scientific expressions.
- 3- Creating acceptable technical terms. (Cited in Shaheen, 1983, p.87)

These efforts, which are a continuation of what has been started earlier in the Islamic era and has been highlighted at the beginning of this study, have continued, boosted by an urge for adopting the western advancements. The ancient have prepared dictionaries for terms e.g. *Mafatih el-Aloum* (Keys of Sciences) by el-Khoarizmi, *El-Ta'arifat* (Definitions) by Abi el-Hasan el-Hrjani, *Moajm Amrad el-Ayoun* (Dictionary of Eye diseases) derived from *El-Canon* by Ibn Sina (Avicenna)

Current Arabs have tailored methods for forming terms that Prince Shabi (1965) reported in the following four:

- 1- Freeing the old meaning for the Arabic word and giving it the new scientific meaning.
- 2- Deriving new words from Arabic or from words borrowed into Arabic to denote the new meaning.
- 3- Translating the meaning of the foreign words.
- 4- Arabicizing foreign words for use. (Cited in El Karrori,86)

El- Karrori (1986) divided current scholars who studied arabicization and created scientific terms into three groups: a group that studied old arabicization and suggested what should be followed now days, for example El-Mogrbi , Dr. Ahmed Eisa, and Father Instas Mary El-Krmaly , the second group followed the same but it elaborated on what should be done in present e.g. Dr. Amin Maalof, Adil Inboba, Hasan Husain Fahmi, and Prince Mostafa el-Shabi, the third group confined itself to enlisting current arabicized scientific terms and glossaries e.g. Jacob Saroof, Foad Saroof, Dr.

Mozhir Saeed, El-Dimyati, Sharaf and others. These individuals' efforts added to the efforts of the Arabic Academies in this regard.

6.6.3 Arabic Language Mechanisms for the Coinage of Technical Terms

Arabic like other living languages has mechanisms that kept the language evolving. These mechanisms depend on derivation, inflection, language analogy, and others in creating new words. Derivation is a process by which one word is derived from the other. Linguists form new words from existing words by analogy means or deriving from the roots: adjectives from nouns/verbs, nouns from verbs and so on. Inflection is a change made in the form of the word to express its relation to other words in the sentence. Thus, derivation is the process of word formation, and inflection is the process of its use in phrases, sentences, etc. Shaheen stated three types of derivation: small, larger and the largest derivation. Arabic is considered a derivative language. (Shaheen, 1983, pp.263-64) Arabic uses affixation in creating new words by addition of prefixes (at the beginning of the word), suffixes (at the end of the word) or infixes (inserting in the word an addition or a change). Affixations are of two kinds: derivative affixations and denoting affixations. Derivative affixation becomes an integrative part of the word like changing past verbs into the present, name of machine etc. Denoting affixations in Arabic is what is annexed to the word to give it a meaning other than its while denoting affixations in English are parts of the words e.g. dia that means double, mono which means one, poli which denotes many, much, multi.

There are other processes that are productive in creating new words in Arabic e.g. shortening or the substitution of a part of a word for the whole word. The shortened forms may soon come to have different meanings or different shades of meanings and thus at this stage the process of shortening has led to the formation of new words. Another is compounding which is a process where two or more words are combined to form a new word. Another category in the formation of words is analogical creation. We find analogy leading children to create incorrect forms in all languages including Arabic e.g. in English mans for men and goed for went. Yet another process of word formation is secondary associations. When a word is uttered, it activates in our memory certain other words on the basis of certain acoustic similarity existing between these words, which may in course of time lead to new meanings resulting in formation of new words.

To conclude these mechanisms, we refer to borrowing from other languages as a source of enriching scientific Arabic. Not only free forms could be borrowed but also

derivational forms, a tendency that could be seen among current Arab scholars. This loan word may undergo some shape change to suit the genius of Arabic, the borrowing language.

The above sections highlighted the coinage of technical terms which include medical terms. Since medical terms are important for this study, the following section will consider the formation of medical terms from the early times of the Islamic world which have been mentioned in earlier chapters.

6.6.4 Arabic Medical Terms

As aforementioned in Chapter Three of this study a number of Moslem scholars during Amoyade caliphates and Abbasid caliphates translated medicine from Indian, Persian, Greek. In the following paragraphs, I will shed light on how these pioneers treated the medical terms in their translations.

For example, Hynayn Ibn Ishag used to introduce the Greek medical term followed by an Arabic translation and then ignored the Greek term that he translated and continued using the translation unless he felt that the reader needed a repetition of the Greek terms. He did not use this method for the names of diseases and medicines. He kept them accompanied by explanations and it seems that he kept them temporarily until the Arabic terms became common (Shaheen, 83).

The second example is Mohamed Ibn Zakaria Al-Razi (Razes), the famous surgeon who came after Hynayn. In a recent study by Moh'd Yousif on Al-Razi's book *al Hawe*, 1248 medical terms were found (Shaheen, 83, p. 155). The researcher gave them a definite scientific explanation. However, he failed in explaining 300 extra ones. He divided these terms into two categories: those of Arabic origin which were 645 and those which were not of Arabic origin (more than 600) and some of them could be related to the donor language. Those of Arabic origin were individual forms, compounding forms and others. Al-Razi used derivation to create medical terms. Yousif found that the ones which were not of Arabic origin could be related to Persian (192 terms), Syriac (110), Greek (164) and none (137 terms). Some of Razi's foreign terms were compounds formed of two words: one is Arabic and the other Persian. Some of the terms were Persian with a change in some sounds e.g. blibil pronounced flifil. Some of the singular Persian words were arabicized and plurals were formed based on Arabic plural forms system. Also adjectives were created from them following Arabic adjectives.

A third example is Al-Khwarizmi, the first and oldest in writing a book about

technical terms *Mafatih al-aloum* (Keys of Sciences) which contained 2400 terms. Medical terms were very few in this book (about 300 terms) and covered the following: anatomy (31 terms), diseases (80), nutrition (40), medicines (40) and medicines with similar names (40).

A fourth example is Ibn Sina (Avicenna), the writer of the famous Arabic medical books, *al Ganon* (The Canon), *al Shifa* (The Healing). He was the first to separate medicine from pharmacology in his book *al Ganon*. He was famous in using compounds in his medical terms e.g. descriptive compounds, subjunction etc. Many of the medical terms he created may not be seen in one of the glossaries or dictionaries of his time. This may be attributed to the confinement of Arab writers on the literary side of the language; besides, the resentment and refusal of some who considered the technical language as a contamination to the pure language.

Ibn Sina surpassed ophthalmologists who were before or after him in his knowledge of the eye. For example, Mohamed bin Gassom el-Gafigi who was three centuries after Ibn Sina wrote *Kitab el- Murshid fi el-Kohl* (The Guide for Eye Diseases) which included as the orientalist Max Meyerhof found 225 terms about the eye and its diseases and 496 terms about medicines and medical herb. In comparison, Ibn Sina who was three centuries before el-Gafigi and thus his contribution to the terms of the eye was expected to be far less than el-Gafigi. Nonetheless, Ibn Sina reported more than 700 of terms about the eye and its diseases. (Shaheen, 83)

This was just a glimpse of what was in the time from the second century up to the sixth century. Evolution of technical terms was a zigzag graph curve where sometimes was up and others down; however, it continued until the sixteenth century when the torch of science moved into the hands of the Europeans.

Europe languages ability of affixation has enabled these languages to develop and flourish. Though Arabic was very rich in its derivatives, its development has been slow and limited because of its derivative nature. A vast number of technical terms found in the European languages were from Greek and Latin. European scholars have found it easier to borrow from these dead languages. They have changed them the way they liked which is not possible in living dynamic languages. This storage of Greek and Latin enabled these European vernaculars to emerge as rich scientific languages.

In front of current Arab scholars is a technical language which we can not say it is English but a grouping of different languages accommodated in the European vernaculars due to the harmonious link of common origins, history and civilization

among the European countries. Arab scholars encounter the following kinds of terms:

1. Proper nouns that became scientific terms.
2. Terms taken from old languages.
3. Terms built on scientific basis e.g. abbreviations and coding. I think Arabic could take it as it has entered other languages and became international. Arabicization may accommodate them according to the Arabic language genius.
4. Terms derived from roots that have certain meanings.

To conclude this chapter, I contend that Arabic language scholars armed with flexibility and a clear goal could make use of all these capabilities of Arabic to accommodate the technical language as their forerunners did to the Greek and Persian heritage of science.

Chapter Seven

Conclusion and Recommendations

Introduction

The purpose of this study was to explore language policies, language conflict and language-user attitudes towards the attempt to change the language of instruction in higher education from English into Arabic. The study focused on the medium of instruction in medical colleges in the Sudan. Based on the results of the analysis, a number of conclusions were apparent in the participants' responses. These are provided below:

1. Most of the textbooks and assigned references were in English
2. The prevailing language of instruction in medical colleges classes was not pure Arabic or English but a mixture of both. The extent of use of English depended on the English competency of the instructor or the students.
3. Most students and especially the seniors perceived the English used in lectures as easy.
4. Activities such as clinical rounds, labs followed the same pattern of medium of instruction used in lectures.
5. Tests were given in English except some colleges, for example Gezira used a mixed English/Arabic.
6. Students reported that English is important for their future career and current studies since there is scarcity of Arabic textbooks, references and Arabic-competent instructors.
7. General education, prior to college studies, did not prepare students to have their studies in English.
8. Students encountered difficulties in reading their English textbooks or consulting English references.
9. Students can prepare and study in Arabic in less time than in English.
10. Students can take more notes in Arabic than in English.

There are a number of limitations to this study. First, I was physically away from the site of the study which limited the access frequency to few visits in my vacation times. This also curtailed the use of other data collecting tools such as

observations, extensive interviews (to include graduates), collection of students' writing samples, graduates' written medical reports. Second, the change of medium of instruction has been perceived as a political issue, thus students and instructors were very conservative in their responses. Interviewees refused taping their responses. Added to that, instructors were doctors who had very tight schedules due to their engagement in many activities. They teach in different colleges, attend patients in hospitals, assume directing some governmental medical bodies, besides, operating their own clinics, dispensaries or hospitals.

Other observations and conclusions from the study of the attempt to change the language of instruction in medical colleges are highlighted in this paragraph and others. The call for arabicization started earlier with the struggle for independence and it has been a means for establishing the nation's identity. In planning a language change it is important to note not only what goals are to be achieved, but also what the current language situation is in the entity so that processes can be put in place. Unfortunately, arabicization of medical colleges was mandated by the State on the assumption that there is an expressed instrumental motivation represented in the eagerness of the people for nationalism and in the hate of the hegemony of the western culture.

One may conclude that an implicit resistance to withstand a top down decision was greater than the ability of the language planners to bring about the suggested language change. Nonetheless, the survey and the interviews revealed that the attitude of most of the students and their faculty members were in favor of arabicization in principle. Positive attitudes of the participants were shown explicitly in the comments that were added to their responses. For example, a comment said, "I think Arabic language is the most comprehensive and the most beautiful accompanied with the references and capable instructors who can offer current beneficial information" (comment #37, Appendix D pp. 216-219). Other comments are "It helps in better understanding" (comment #8, Appendix D pp. 216-219). "It eases understanding" (comment #9, Appendix D pp. 216-219). Students showed support of the pedagogical benefits of Arabic like they can prepare and study in Arabic in less time than English. They can take more notes in Arabic than in English. In addition, Arabic as a native language of the students offers them a mighty and indispensable ability to convey ideas, capacity for imaginative or creative thinking than the limited capacity given by the foreign language.

Notwithstanding, participants and faculty members reported that English is important for students' current medical studies and future career. Thus, the language change to Arabic should not lead to *language loss* that is to say marginalizing English or as Dafa'allah (1966) warned that "any steps that are taken prematurely are bound to result in more loss than gain" (Dafa'allah, 1966, p.5). A realization of the need to boost the teaching of English even if arabicization is fully implemented was present in the participants' responses.

The results revealed a high degree of variation in the current languages of instruction in the colleges. The use of English or mixed English/Arabic shows that the policy implementation has clearly run into difficulties. A number of difficulties were reported. Some of these are exactly the same as those reported by Taha, "the general lack of resources, and especially library resources in the Sciences; the problems of standardizing and disseminating scientific terminologies; the shortage of staff qualified to teach in Arabic and engage in Arabicisation and translation activities; and the lack of in-service support for university teachers switching to the use of Arabic as a medium of instruction" (Taha, 1990, p.303).

A critical variable in the success of any language policy is proper implementation (See Rubin, 1984). The implementation of arabicization was not perceived by the participants as positive. In interviews, faculty members showed their criticism to the current plans of implementation. Nonetheless, a natural tension develops between what people believe should be happening and what they believe is actually happening. The basic thrust of good language planning is to identify this discrepancy and work for a solution. Mindful of the complexities of implementing language change, I contend that language planning needs to benefit from the studies of how successful organizations implemented change, the studies that include a wealth of change management principles and tools. Simply implementing a language change without the consideration of the cultural settings and the change phases of the process is not sound, effective, or efficient. Ignorance of the stakeholders and resistance to the realities of cultural differences is not good for the participation of the affected personnel in the process of the language change.

This study culminates in calling for adoption of change management principles and tools as an integrative part of language planning and language policy implementation. It has led to several practical initiatives that may help those who are language policy makers, change agents in universities, faculty members and students to

raise their awareness of issues that concern the medium of instruction in colleges of medicine. The first initiative is about the medium for teaching medicine and the status of English when it is not used as the instructional tool in these colleges. The second one is an outline of the overall plan which facilitates the recommended mechanism to put the language change vision, strategy and plans into action. The third is about readiness for the change and the concepts of change, a departure from present situations, beliefs, or attitudes and movement toward a goal, an idealized state, or a vision of what should be. The fourth is how to keep a constant progress, to complete the shift from the current situation where a dual language policy is used to a post-change state in which arabicization is fully implemented and all the associated variables and measurements become stable and ensure progress.

7.2 A Medium of Instruction

I concur with the UNESCO oft-cited view that "we take it as axiomatic that the best medium for teaching is the mother tongue of the pupil" (UNESCO, 1953, p.6) "A wealth of research supports the view that education in a language already known to the learners, typically their mother tongue, is more likely to succeed than education in a language children meet for the first time as they enter the classroom" (Williams et al, 2002, p.306). If a language other than the mother tongue is to be used as medium of instruction, distortion of knowledge will take place because the learner will have difficulty not only in grasping fully the implications of what is being learnt, but also in manipulating the concepts learnt. Hence, the instructional medium for teaching medicine in Sudanese medical colleges should not be English for a number of reasons. The most fundamental one is that competencies in this language as students commented and faculty member reported are not to the level that allows access to knowledge. One of the students' comments stated "One's understanding is much better in his mother tongue than a foreign language, he does not read or write well" (comment # 20, Appendix D pp. 216-219) Another comment said, "Human brain can understand any material, scientific or non-scientific, in his mother tongue in a better way than any other language. He can use it to express himself in a very high precision where he may use another language inaccurately and which may mislead others and understand his message differently. Here, we find medicine is taught in Germany in German, in Japan is Japanese, and in France is French, and so on. With the exception of the Arabs who are currently followers of the British and Americans civilizations. Nonetheless,

English should be used as a second language in teaching medicine due to its importance in connecting through the Internet Arab doctors with their colleagues in other countries and other resources” (comment # 28, Appendix D pp. 216-219)

Teaching in English sends a message that Arabic has less value than English as a tool of learning. Besides, it deprives students from having the opportunity to use the skills which may have been well-developed in Arabic (L1). The findings of the research have shown that many students preferred to answer the questionnaire in Arabic, even in colleges where English is the dominant language e.g. Khartoum. Add to that, several research papers in a recent science and mathematics education conference in a southern African country revealed various problems stemming from the use of English as a medium of instruction (Cleghorn & Rollnick, 2002). Sudanese students are no exception from this African phenomenon. They have deficiency in English and also some of their teachers according to written comments on the questionnaire by some of the students. For example, one said, “Incompetence in English language” (comment # 21 , Appendix D pp. 216-219). Another said, “Some Sudanese Doctors (*instructors*) cannot pronounce properly” (comment # 5, Appendix D pp. 216-219). Deficiency in English was observed by El- Subeai among physicians who had their studies in English for 6 years followed by 4 years of post graduate studies in Saudi Arabia and he added that “Students of medicine and medical post graduate studies in the Arab world have the same deficiency in the language as the Saudis” (El-Subeai, 95, p.69).

The data in the study supported the use of a mixture or mixed English/Arabic. Many factors have led to this preference of a mixture instead of Arabic only. One is the lack of adequate resources like textbooks, references and trained instructors in Arabic. Another is the experience of the students and faculty members who had the bitter-sweet of the implementation with medical term variations in the available Arabic written materials. A third is the awareness of students of their need to English in accessing medical knowledge that is mostly published in it. All these and other factors which are temporarily and can be resolved have led the students and their instructors to choose a mixture as a medium of instruction. Notwithstanding, Arabic should be the medium of instruction in teaching medicine in the Sudan since it enables the students to understand and manipulate scientific concepts efficiently without the foreign language inhibitions. It will stop the foreign language expressions that slip in and puzzle the patients in the doctors’ dialogues. It will create a two-channel communication between the physicians,

assistants, nurses and their patients since they will be speaking the same language and remembering that their words have power that shape their relationship. It offers a portal for the physician and the patient to connect....two human beings searching together for solutions. If the disease persists, this same language of caring creates a relationship of trust that can prove more comforting than medication in many cases. Moreover, it creates a bond of understanding instead of distance between them that leads the patients to follow the physician's directions, which results in easing the physician's work and facilitating a quick healing. In addition, thinking in the mother tongue is easier than using a language one lacks competency in. Besides, students could shorten their stay in college since they need a short time to understand, retain and utilize what they have learnt. A support for using the mother tongue can be found in some countries which are advanced in medicine. They teach it in their languages, for example, Germany uses German, China uses Chinese and Japan uses Japanese. Moreover, some revived languages like Hebrew in Israel have been used in teaching medicine.

In the full implementation of arabicization, the use of Arabic should not be at the expense of English. English should preserve the status of a highly needed second language and not as a medium of instruction. This is because it is expected that English in the arabicization process will lose due to the shift in emphasis and the severe reduction of exposure. I contend that it should be boosted and more emphasis be placed on teaching it as a second language to make up for the use of Arabic in teaching medicine and to meet the need for an international language. Most medical journals, texts, Internet sites are in English which necessitates and makes it crucial for medical professionals to bring themselves to a language level that will keep them updated in the field. The medical curriculum in the Sudanese medical colleges should include general and specific English that can arm students with a sound grasp of English to follow their careers abroad and keep a link to the international medical arena.

As noted above, the current situation of arabicization in medical colleges has encountered difficulties that have built a negative attitude among the students and faculty members. The failure may be attributed to many reasons, some of which were pinpointed by Professor Osman Taha, Dean of Gezira Medical College in his paper in the Gezira University Arabicization Conference that was held on 28th of August, 2002. The reasons are translated into English and summarized in the following:

1. Instructors' lack of adherence to the published arabicization program at the level of the sections and individual level.

2. Insistence of many instructors of having Arabic reference which were rare and if they are available, they may not be appropriate for teaching for the following reasons:
 - Terms were translated according to individual's taste and not according to the agreed glossary- Unified Medical Glossary.
 - Instructors trained in English face great difficulties in consulting Arabic references.
 - Involvement of the instructor in the process is of paramount in understanding and familiarizing oneself with Arabic terms.
3. The huge workload of the instructor, the increase of students' intake; besides, few instructors in the college do not allow enough time for the needed arabicizing activities.
4. Students have not subscribed to arabicization and they are afraid of being considered second degree physicians in comparison with those graduated from colleges where English is the medium of instruction.
5. Students' fear of failing future career higher studies conducted in English.
6. All available resources (textbooks, library, journals, encyclopedias, Internet) are in English.
7. Negative influence on students and faculty members from physicians, higher studies students and other universities students who studies in English.
8. Unavailability of regular Arabic journals.
9. Students and teachers considered arabicization a top-down political move.
10. Medical services have not been arabicized.
11. Differences in the available translated books' language and terminology.
12. Uneasiness of knowledge integration at the beginning of the implementation, that is to say lack of flow of information.
13. Arabicization has limited updating lectures due to the scarcity of time to translate.
14. Missing administrative follow-up.
15. Failure of Khartoum Medical College, the modal for other colleges, to embrace arabicization has a negative impact on other universities.

(Osman, 2002, pp. 41- 44)

Osman was reflecting on Gezira Medical College experience. However, this is true

about the situation in general and I see the major contributors to the failure or the existing situation have been the unscientific approach based on unsound studies and the missing of change management procedures. To have arabicization implemented, we need to prepare the key players, students, instructors and resources.

How will this be attained without a clear vision, a strategy and articulated plans? The following section highlights a mechanism that can significantly influence the success of putting the policy in action.

7.3 The Mechanism

Arabicization should not be an effort of an individual college, a university or even a country, it should be energized in a country by a coordinating body that should be a part of a higher committee e.g. an Arab League committee or any similar organization. This higher committee must present the big picture that includes the target specialties e.g. medicine, engineering, economics etc. The outline of the plan should include the following:

1. A mission statement
2. Goals and means
3. Coordination procedures
4. Procuring resources
5. Training
6. Technical and financial assistance

Based on this outline, this study highlights what should be appropriate for arabicization in medical schools in the Sudan, the site of the study. First of all, a committee should be formed from all medical professions in medical colleges and institutes of hygiene. This committee should work under the guidance of the High Commission of Arabicization; the Higher Education Ministry appointed body for following the implementation. Its duty is to coordinate the efforts of arabicization and stream-line the changes. Its overall goals should include the following:

1. Works on aligning the efforts in arabicizing medical colleges and institutes of hygiene.
2. States the strategies that should be followed in building teams, conducting workshops.
3. Stages the translation of the curriculum.
4. Works on listing and prioritizing the textbooks that need to be translated or

written.

5. Procures, oversees, and facilitates sharing resources.
6. Encourages participation in writing, translating, publishing and recognizing achievements.
7. Works as a liaison with similar bodies inside the country and abroad to share successful experiences.
8. Budgets time through procuring finished works and avoiding duplications.
9. Invests in team building and organizes teams for group translation and secures printing resources.
10. Selects, decides the glossaries to be used in translation and acts as a reviewer of translated works.
11. Oversees preparation of glossaries for different branches of medicine e.g. anatomy, microbiology etc.

The committee should have subcommittees at the level of colleges to carry out actual work at the vicinity. The college committee forms various teams who assume different roles under its guidance. Besides, it leads the change at the level of the college. It runs campaigns and conducts workshops, seminars and conferences. The formed teams should participate in group translation of textbooks according to the set roadmap, review, discuss, amend the products and sign them off in workshops. Then, the finalized works should be submitted to the national committee for further review, the adoption process and printing.

As aforementioned, the language extensively dominating the field of medicine is English. Thus, there is a need for translation, a process of replacement of textual material in the source language (English) by equivalent material in another language (Arabic). Is the translation of medicine different from the translation of other disciplines? If different, what are the special characteristics of translation of medicine? As stated in the previous chapter translation of medicine does not aim at reflecting the literary quality of the material being translated; besides, it does not accommodate embellishments like other literary works. It demands clarity of exposition and it should be readable and easily understandable. Thus, a subject matter expert of sound knowledge should handle the translation because he could interpret the concepts correctly and have their appropriate equivalents in Arabic. The concentration in translating medicine will be on the vocabulary or the terms. A special attention should be given to its coinage as mentioned in the previous chapter. Translators of medicine

have these types of translations to use or choose from:

1. Transcription which denotes rendering the sounds of the source language (English) into target language (Arabic).
2. Transliteration which is the process of rendering the letters of English alphabet in the letters of Arabic which are different.
3. Borrowing, the process I referred to in the previous chapter, is very important when translators resort to in case the target language (Arabic) has no equivalent to the words in the source language (English).
4. Literal is when the translation results in one to one structural and conceptual correspondence.
5. Transposition is when translation renders the grammatical and lexical structure of the source language (English) into the appropriate respective structures in the target language (Arabic).
6. Modulation is different from transposition. It is concerned with modifications of meaning so as to suit the genius of target language (Arabic).
7. Adaptation renders a material not identical, but only analogous to the source language (English).

(Thirumalai, 2003, Online, no page)

An awareness of these types plus a sound knowledge of both languages, the source (English) and the target (Arabic) is an advantage that enables one to resolve ambiguities, anticipate and avoid interference between languages. The translator should not forget that there is not always an exact parallel between English and Arabic; nonetheless, one should care for accuracy and adequacy in translating medicine because of the information high sensitivity impact on people's lives.

To conclude this section, the following additional tips I deduced and some are translated from their Arabic sources are recommended for a successful translation of medicine in universities.

1. Teams should check with arabicization higher committees that the text has not been translated before and it is in its complete form.
2. Translators should be aware of the heritage of science translation in general and medicine in particular that took place in the past and which has been highlighted in previous chapters.
3. The translating team should include at least one subject matter expert in the branch that the translated material belongs to.

4. It should also include an expert with a good competence in both languages and their linguistic nuance to help translators in their task.
5. Teams should use the agreed upon dictionary(s) e.g. the Unified Medical Dictionary.
6. If the equivalent given by the dictionary is felt to be inadequate, it should be stated with a caution to the readers.(Shaheen, 83)
7. If an exact equivalent is not attainable in Arabic, the translator is required to provide definitions and appropriate terms e.g. a phrase, a sentence, or even a paragraph that may be used to explain a single word/concept given in the English text (ibid).
8. Reference books should be used, wherever necessary, in order to properly interpret the terms and expressions given in the English text, and clarify their meanings.
9. Concepts and Ideas and not merely words should be translated (ibid).
10. Conventions adopted in Arabic should be followed in translating units of measurements, formulae and the like (ibid).
11. Transliteration and medical symbols may be accompanied by the terms /symbols in parentheses as they occur in English.
12. Trade names in use may be presented as they are accompanied with Arabic synonyms.

7.4 The Change

The third initiative is about readiness for implementing arabicization. The efforts to use the mother tongue in teaching medicine show that readiness at the level of the stakeholders, the instructors and students has been ignored in the consideration of the arabicization process. Thus, the situation in the colleges, the study site, presents a state of confusion. Two medical colleges, Omdurman and Gezira, claim that they are striving to arabicize the language of instruction. However, instructors are voluntarily using a mixture of Arabic and much English and as it has been discussed in the previous chapter that this dual language will have a negative impact on both languages and it may result in a non-standard language that will impede grasping concepts and conveying what is learnt. Khartoum medical college has frozen the ministerial decree of arabicization at the college level. Nonetheless, its instructors have been compelled to use a mixture of Arabic and English as the others do due to the low English level of the entering students.

Arabicization is a language policy, a language change that should go through the phases of change identified by Duck (2001). According to Duck, there are five phases: beginning with stagnation, proceeding through preparation, implementation, determination and ending-hopefully- with fruition. One of the signs of stagnation is the language-in-education debate that has been swinging in conferences, debates, the media, and medical professional circles about the suitable medium of instruction for teaching medicine. This has led to the confusion of instructors, students and language policy makers who seem to be absorbed in an endless debate rather than applying established knowledge about language in education. Instructors seem also to be were lost in the confusion. They feared future after graduation, scared by uncertainty and the feeling of being stripped of a competitive advantage that enables them to work with those who have studied medicine in English. The other sign is the current situation of language of instruction which is neither Arabic nor English but a mixture of non-standard versions of both with different weights according to the proficiency of the instructor and the students. The danger of stagnation if people do not proceed into preparation phase is that they will be in the illusion of heading towards the set goal and not realizing that they keep on nursing and pruning the same flowering plants and thus reap nothing.

People tend to focus solely on the operational aspects of the change but to implement new policies requires people to think and act differently. To be fully effective and ensure success, change must address the intellectual and emotional issues as well as the mechanisms and the system. Change is a dynamic process, rather than a series of acts and events. In the dynamics and during each phase many issues will spring up, downward pressure and negative events will occur, good preparation is a promising indicator for success. People should expect these difficulties, and prepare to respond to them. In fact, they should anticipate, create, recognize, and enjoy positive achievements. They should be aware of subtle changes. The decision of changing the language of instruction is an event that will make the instructors' experiences in the foreign language obsolete. Thus, the decision brings all the instructors to start a new experience and this will affect the status quo and the ego of seasoned instructors who will not be easily willing to leave behind the wealth they have gathered through years. Failure to see and shape such influences is like wearing a blindfold and then being surprised when you crash into the furniture.

In the preparation phase of the change, faculty members and the students are expected to experience a fair amount of anxiety about what the future holds.

Preparation, a planning and getting-ready phase, begins when the decision to change is made, and it continues until the execution of plans commence. When there is a hope that the change initiative will turn well, people's anxiety can generate commitment, excitement and even exhilaration. Hence, universities management must try to create productive anxiety- an appetite for change. They should work to help instructors through an extensive training and incentives to feel hopeful and excited about the future and eager to participate and contribute to it, because these emotions can produce the energy that is of paramount when working the myriad tasks (translating, writing and teaching) during the implementation phase. Productive anxiety can not be generated unless the administrations create a sense that the current status quo is not working any more. Instructors have to contribute and work hard in the arabicization process through translating and producing teaching material to gain a satisfaction with an achieved status quo.

College management must be aligned and energized around a clear vision and strategy. The vision must be articulated to enhance detailing an overall plan that is easily understood and executed. The plan should consider the phases of change and the main players in the process, administration, faculty members and the students. It is not expected that people get excited about the future, if they do not know what the vision is. Requirements will not be assayed, if one does not know what the strategy and objectives are. Orientation courses and presentations on the history of the contributions of Moslems in medicine are tools that could be utilized to help instructors as well as students to subscribe to the arabicization process.

At some point during preparation- when the task of team building, gaining alignment and commitment is fulfilled- the administration needs to assess the college readiness for change. It needs not to wait for all to subscribe in the process since some will continue resisting throughout the change. It is rare for all to be fully committed and energized at the same time and to stay that way. Individuals will experience change differently and inconsistently. Complete harmony and agreement may not be achieved. Nonetheless; administration should be vigilant and assess at large where people stand and how they are feeling. A survey could be the tool to address the following:

1. Readiness to change. Do the instructors and their students understand and believe change is needed? Are they aware of the consequences of carrying the change? Do they understand the disadvantages of the current situation where a dual language is used in teaching?

2. Willingness to change. Are they sufficiently dissatisfied with the current situation and willing to change? Do they know what capabilities they need to develop to meet the challenges? Do they trust the set plans and have confidence that the plans are practical and achievable?
3. Ability to change. Do they believe that the university has the skills and tools needed to affect change? Are they personally equipped? Do they believe in the continuity and permanency of the process?

Upon analyzing the tailored survey on the above themes, management can target its communication and interventions for the greatest possible return of their efforts.

Implementation is the action phase that prepared people will be eager to start. The beginning will generally be when the plan is fleshed out with enough details to start making assignments, writing textbooks, translating, printing... etc. Implementation is not always expected to be smooth since it is reality, and thus, reality with its ups and downs, hardships and messiness. At the crossover moment from preparation to implementation, the situation will be fuzzy and overseeing teams will experience pain, the pain of seeing things not carried out as they have been envisioned. They will encounter embracing groups with different degrees of enthusiasm and some who may exhibit powers of denial and sabotage. Management should continue its vital role in removing negative consequences and boosting win-win spirit. It should utilize communication since communication will take on new importance. It becomes an operational issue, absolutely necessary to keeping the change effort on track and to ensuring that each university knows what the other is doing, the work stays coordinated, and mutually reinforcing.

During preparation, management and faculty members envision the future. In implementation, they work to bring about what they have pictured. Then, at some point, they begin to realize that they must actually live and work in the new situation, the arabicization, and that is when the determination phase sets in. In this phase, instructors ask themselves the hard questions about their current stand and their future. Am I doing a good job? Has arabicization made a difference in delivering and in the students' learning process? Are we heading in the right direction? Is today better than yesterday? Have I been adequately compensated, rewarded and recognized for the seemingly endless pain and hassle we have been through and may still have to go through? When instructors answer the hard questions for themselves in a positive way, they can see the value of their participation, redouble their efforts and endure the trial and challenges

that are part of embedding the change. When they fail to answer these questions or assume they are negative, their effort to change loses momentum, and every action is viewed with skepticism or distrust. Management should pay attention to the symptoms of such operational problems, teams may be assigned to resolve them and monitor progress. Determination phase is the true test of change, however; it may be prolonged and difficult and entails hard work in striving for fruition.

Fruition brings the realization that the efforts to change are-at last- having a genuine, tangible and positive payoff. Instructors, students and the society believe in arabicization when the result is good physicians who understand their subject and contribute to it, writing and publishing, genuine consumers of the profession and providers of new knowledge.

7.5 Post-Change Constant Progress

Arabicization should not stop at a point and return to stagnation stage because at this edge many losses will happen. To survive and prosper the change mechanism should continue since medicine is not static but dynamic. New discoveries and information are added every minute around the globe. Arabicization needs to include these new additions through written works or translations. El-Subeai (1995) has estimated the Arabic medical reference books needed to be written or translated besides what is currently available as one hundred (El-Subeai, 1995, p101). Through time, the information in these books needs updating and supplementing, this necessitates a continuing process and mechanism of writing and publishing.

Life seems so successful and positive during the early days of fruition. This normal feeling leads people to keep doing things the same way. The fear is that this impulse can lead, all too quickly, to rigidity and obsolescence. So, what promoters of the change ought to do? How to ensure that the proclivity for the change becomes "institutionalized"? Here are some suggestions:

- "Don't make today's innovations into tomorrow's sacred cows" (Duck, 2001, p.263). The ways which were right at some time and instrumental may lose their novelty and wear off. Thus, they should be scrutinized and adjusted.
- Build in the key players in the arabicization process skills of self-observation and correction. Have everyone participate in the process because always with new learning, the more it is practiced and developed, the more valuable and owned it becomes.

- Inject new blood in the teams. People who have led teams often need a respite. They experience the change-weary. New fresh members enter the teams and question the assumptions and practices and thus interject new ideas or ameliorate old ones.
- A recurring national recognition should be held to recognize those who were so energized by the change process and became champions and advocates of arabicization. This may encourage leveraging their input to get such recognition.
- Team leaders should keep listening and communicating with all the parties in the arabicization process. The listening and talking must continue formally and informally in the sites and off-sites.

In a nutshell, there is always the chance to calibrate our experiences and realize that we have achieved success. We need to articulate the issues and dynamics involved to ensure control over rolling the ball in continuity and reap success.

To conclude this study, I think it is high time for language planners to benefit from change management successes in changing organizations. It is of paramount to look at the language change not as a mere change but a challenging process that entails involvement of many variables that need to be considered.

APPENDIX A

بسم الله الرحمن الرحيم

STUDENTS' QUESTIONNAIRE

This questionnaire is designed to find out your attitude towards how you would like to be taught medicine (in Arabic/English). Probably, it will take 15 to 20 minutes to complete it. The accuracy of the results depends on how honest you can be. *Therefore, it is critical to the success of this survey that all answers are individual and that the possible answer(s) is/are given.* This questionnaire is anonymous. Your participation is very important and it will directly contribute to the success of the research.

You are requested to put a mark check ✓ against your chosen response(s).

1. Tick what pertains to you

a-University

Al- Gezira

Islamic Omdruman

Khartoum

b- Gender

Female

Male

c- Class

First Second

Third Fourth

Fifth Sixth

d-Nationality

Sudanese Other Arab African Foreigner

e- Native Language

Arabic English Other specify _____

f- High School

Sudan An Arab country African Other specify _____

g-Medium of Instruction (taught in)

Arabic English Other state _____

2. Given the choice of deciding the language of your medical studies, which one will you select:

Arabic English Mixture of Arabic and English

3. How important do you think English is to your

a) current medical studies?

very important important somewhat important unimportant

b) future career?

very important important somewhat important unimportant

4. What percentage of reading assignments in your medical classes are in: a) Arabic

90-100 % 70-89 % 50-69% Less than 50 % 0%

b) English

90-100 % 70-89 % 50-69% Less than 50 % 0%

5. What language problems are you currently facing in your academic studies? (You may check more than one)

a) Arabic

limited vocabulary poor grammar poor speaking skills poor listening comprehension slow reading speed poor writing skills poor reading comprehension other

(specify)_____

b) English

limited vocabulary poor grammar poor speaking skills poor listening comprehension slow reading speed poor writing skills poor reading comprehension other

(specify)_____ .

6. What percentages of your textbooks in your courses are in

a) Arabic?

90-100 % 70-89 % 50-69% Less than 50 % 0%

b) English?

90-100 % 70-89 % 50-69% Less than 50 % 0%

7. Does your lecturer ask you to write reports and research or communicate in

a) Arabic?

Always often occasionally never

b) English?

Always often occasionally never

c) Mixture of Arabic and English?

Always often occasionally never

8. Are you required to write answers to tests in

Arabic only English only Mixture of Arabic and English

9. How is the course content presented in your oral lectures?

Arabic only Arabic but medical terms in English

Mixture of Arabic and English English

10. How do you receive bedside teaching (clinical sessions or rounds)?

Arabic only Arabic but medical terms in English

Mixture of Arabic and English English

11. In case of using Arabic in teaching medicine, what kind of Arabic may your teachers use?

Standard Arabic Mixture of Standard Arabic and Sudanese Arabic Sudanese Arabic

-If Sudanese Arabic is your teacher's medium of instruction, what does she/he use

Common Sudanese Arabic subset of Sudanese Arabic (regional dialect)

12. What language is used in your labs and clinical sessions & rounds?

Arabic only Arabic but medical terms in English

Mixture of Arabic and English English

13. What do you think of the language used in

a) lectures?

easy to follow ambiguous lack clarity difficult

b) clinical rounds?

easy to follow ambiguous lack clarity difficult

14. How much do you think your teacher is positive and supportive to Arabicization?

90-100 % 70-89 % 50-69% Less than 50 % I don't know

15. Does the English you had in high school helped you to understand lectures and clinical rounds if they are given in English only?

yes a little not at all I don't know

16. How much do you expect to understand when the lecture/ the clinical round is presented only in English?

90-100 % 70-89 % 50-69% Less than 50 % 0%

17. Should the materials in the first year English course be relevant to the medical field?

Yes No (if no, skip the next question)

18. What percentage of English materials in the course should be relevant to the medical field?

90-100 % 70-89 % 50-69% Less than 50 % 0%

19. A lecturer should use a mixture of Arabic and English in delivering his lecture.

strongly disagree disagree no opinion agree strongly agree

20. What do you see as a main reason for using Arabic as a medium of instruction in the college of medicine? Please rank all those relevant in order from '1' downwards.

empowerment of Arabic political factors cultural identity socioeconomic factors
pedagogical factors other (please write) _____

21. What is your reaction if the language of teaching is one of the following? (Please have a check for each medium)

#	Medium of Instruction	Very Positive	Positive	Neutral	Negative	Very Negative	Not Sure
1	Arabic only						
2	English only						
3	Much Arabic and Little English						
4	Much English and Little Arabic						

22. Which of the following language skills do you think are important than the others in your medical studies? (Rank them this way: 1=most important, 2= important, 3= less important, 4=least important. Rank all.)

a) Arabic

listening speaking reading writing

b) English

listening speaking reading writing

23. Why do you think English language skills are needed for your success in medical studies? (You may check more than one)

Reading to understand medical references, Internet sites and medical journal articles

Understanding the English mixed with Arabic in lectures and clinical rounds Understanding seminars and conferences conducted in English

Future post-graduate studies abroad

24. Which of the following English curricula do you perceive is the best one to facilitate your medical studies?

General English in the first year, no need for specific English

General English in the first year, specific elective English in the following years

Specific English from the first year, general English through the following years

Specific English from the first year through the following years

25. Do you face any problems in understanding arabicized medical terms? yes a

little not at all

26. What is the percentage of your understanding of arabicized medical terms?

90-100 % 70-89 % 50-69% Less than 50 % 0%

27. What is the cause of difficulty in understanding some arabicized medical terms?

use of uncommon Arabic words

poor and verbatim translation

Arabic language failure to accommodate the medical term no idea

28. Which of the following language skills do you feel are more important for freshmen to improve?

(Rank them this way: 1=most important, 2= important, 3=less important, 4=least important. Rank all.)

a) Arabic

listening speaking reading writing

b) English

listening speaking reading writing

29. Arabic can accommodate medical science terminology because new words can be formed by derivation, construction or analogy.

strongly disagree disagree no opinion agree strongly agree

30. Check the appropriate

I can read a medical article in Arabic in less time than in English.

A medical article in English will cost the same time as when it is in Arabic.

31. I am less likely to ask questions or convey an idea if the instructor uses only English.

strongly disagree disagree no opinion agree strongly agree

32. The amount of time one spends in studying/preparing one's studies in Arabic compared to English

increases remains about the same decreases

33. In a class delivered in Arabic, I may capture more lecture notes than when the class is in English.

strongly disagree disagree no opinion agree strongly agree

34. To expand the lecture notes, you need to access reference resources. How much of reference material is available in

c) Arabic

Much enough not enough none

d) English

Much enough not enough none

35. Consulting a medical reference in English causes me some difficulties.

strongly disagree disagree no opinion agree strongly agree

If so, the difficulties are

Language-related Terminology- related Other specify _____

36. Using a certain language in teaching medicine necessitates the availability of the following: -

a) A trained instructor in the chosen language.

strongly disagree¹ disagree no opinion agree strongly agree

b) Textbooks, references and other resources in the chosen language.

strongly disagree disagree no opinion agree strongly agree

c) An ongoing translation and updating mechanism

strongly disagree disagree no opinion agree strongly agree

37. The Arabic translations in my medical dictionary are different from what I had in class.

strongly disagree disagree no opinion agree strongly agree

38. Medical term translations are different in different textbooks and dictionaries.

strongly disagree disagree no opinion agree strongly agree

39. In using Arabic to teach medicine, different instructors may use different Arabic medical terms.

strongly disagree disagree no opinion agree strongly agree

40. Do you plan to pursue higher studies abroad after graduation?

Yes No Undecided

If so? Will you work on your English in parallel with your current medical studies?

Yes No Maybe later

41. Read the following and decide what percentage(s) you will understand and retain of these terms in each language:

Pectus excavation	الصدر المتكفف
-------------------	---------------

Pleural sclerosis	تصلب جنبي
Placebo	دواء وهمي (غفل)
Hyperacusis	فرط حساسية الأذن للأصوات
Glosso pharyngeal nerve	العصب اللساني البلعومي
Hypoxia	نقص اكسجة
Immunosuppression	تثبيط مناعي
Retinopathy	اعتلال الشبكية
Endocrinology	علم الغدد الصماء
Osteopenia	تخلخل العظام

a) Arabic

90-100 % 70-89 % 50-69% Less than 50 % 0%

b) English

90-100 % 70-89 % 50-69% Less than 50 % 0%

42- What percentage(s) of scientific or medical terms compared to the common language is/are found in a page of a medical textbook in English?

More than 50% 40-50% 30-39% 20-29% 10-19% 5-9% less than 5%

This completes the survey. Your response is extremely significant, and I highly appreciate the fact that you have given me this great help to complete the study. Again, thank you for your assistance.

بسم الله الرحمن الرحيم

استبيان الطلاب

القصد من هذا الاستبيان هو معرفة رغبتك في ماهية اللغة التي تريد دراسة الطب بها (العربية أو الإنجليزية) وعلي الأرجح فإن ذلك سيستغرق ما بين ال 15 إلى 20 دقيقة. دقة النتائج ستعتمد علي صدقك في الإجابة. وبناء علي ذلك فمن الضروري أن تكون الإجابات مستقلة لنجاح المسح مع تضمين كل الأجوبة المحتملة. البيانات التي سيجمعها هذا الاستبيان ستظل مجهولة المصدر. أن مشاركتك ضرورية جدا لأنها ستساهم بصورة مباشرة في نجاح هذا البحث.

فكل ما هو مطلوب منك هو أن تضع علامة ✓ بمحاذاة الإجابة المختارة:-

1- الرجاء أن تضع علامة ✓ في محاذاة ما يناسبك:-

أ- الجامعة ب- النوع ج- الصف الدراسي

الجزيرة ذكر الأول الثاني

أمدرمان الإسلامية أنثي الثالث الرابع

الخرطوم الخامس السادس

د- الجنسية

سوداني جنسيات عربية أخرى أفريقي أجنبي

هـ- اللغة الأم

العربية الإنجليزية لغات أخرى تحديدا.....

و- المدرسة الثانوية

السودان دولة عربية أفريقيا دول أخرى وضح.....

ك- لغة الدراسة في الثانوية

العربية الإنجليزية أخرى تحديدا.....

2- إذا أتاحت لك الفرصة لاختيار اللغة لتلقى الدراسة الطبية فأى لغة ستختار؟

العربية الإنجليزية مزيج من العربية و الإنجليزية

3- كيف ترى أهمية الإنجليزية بالنسبة ل :-

أ- دراستك الحالية مهمة جدا مهمة مهمة إلى حد ما غير مهمة ب- عمك في المستقبل مهمة جدا مهمة مهمة إلى حد ما غير مهمة

4- النسبة المئوية لفروض القراءة في دروس الطب هي:-

أ- بالعربية 90-100% 70-89% 50-69% أقل من 50% صفر %

ب- بالإنجليزية 90-100% 70-89% 50-69% أقل من 50% صفر %

5- ما هي المشاكل اللغوية التي تواجهها الآن في دراستك الأكاديمية:-

أ- باللغة العربية

محدودية معرفة المفردات ضعف النحو والصرف ضعف مهارات التحدث باللغة ضعف ملكة الإصغاء وبالتالي الفهم بطء سرعة القراءة ضعف المهارات الكتابية عدم إدراك وفهم ما يقرأ أخرى تحديدا.....

ب- باللغة الإنجليزية

محدودية معرفة المفردات □ ضعف النحو والصرف □ ضعف مهارات التحدث باللغة □ ضعف ملكة الإصغاء وبالتالي الفهم □ بطء سرعة القراءة □ ضعف المهارات الكتابية □ عدم إدراك وفهم ما يقرأ □ أخرى □ تحديداً.....

6- ما هي نسبة الكتب الدراسية المقررة في منهج دراستك:-

أ- بالعربية

□ 100-90% □ 89-70% □ 69-50% □ أقل من 50% □ صفر % □

ب- بالإنجليزية

□ 100-90% □ 89-70% □ 69-50% □ أقل من 50% □ صفر % □

7- هل يطلب منك المحاضر كتابة تقارير وبحوث أو التعامل:-

أ- بالعربية؟

دائماً □ غالباً □ بين الحين والآخر □ أبداً □

ب- بالإنجليزية؟

دائماً □ غالباً □ بين الحين والآخر □ أبداً □

8- هل يطلب منك الإجابة على أسئلة الاختبارات

بالعربية فقط □ بالإنجليزية فقط □ مزيج من العربية والإنجليزية □

9- كيف يقدم محتوى المقرر التعليمي في المحاضرات الشفهية؟

بالعربية فقط □ بالعربية ولكن المصطلحات الطبية بالإنجليزية □

مزيج من العربية والإنجليزية □ بالإنجليزية □

10- كيف تتلقى الحلقات و الدورات السريرية في المستشفيات؟

بالعربية فقط □ بالعربية ولكن المصطلحات الطبية بالإنجليزية □

مزيج من العربية والإنجليزية □ بالإنجليزية □

11- في حالة استخدام اللغة العربية في تدريس الطب ما هو نوع اللغة التي يستعملها أساتذتك؟

اللغة العربية الفصحى □ مزيج من العربية والعامة السودانية □ العامية السودانية

إذا كانت العامية السودانية هي الوسيلة التي يستخدمها أساتذتك فما نوعها؟

العربية السودانية الشائعة □ اللهجات المحلية □

12- ما هي اللغة المستخدمة في دروس المختبرات و الحلقات السريرية؟

العربية فقط □ العربية ولكن المصطلحات الطبية بالإنجليزية □

مزيج من العربية والإنجليزية □ بالإنجليزية □

13- ما رأيك في اللغة المستخدمة في:-

أ- المحاضرات؟

سهلة المتابعة □ غامضة وملتبسة □ ينقصها الوضوح □ صعبة □

ب- الدورات السريرية؟

سهلة المتابعة □ غامضة وملتبسة □ ينقصها الوضوح □ صعبة □

14- إلى أي مدى تعتقد بأن أساتذتك يقبلون ويؤيدون تعريب تدريس الطب؟

□ 100-90% □ 89-70% □ 69-50% □ أقل من 50% □ لا أعرف □

15- إذا كنت تدرس بالإنجليزية الآن فهل تؤهلك اللغة التي درستها في الثانوية العليا لفهم المحاضرات والدورات السريرية؟

نعم □ قليلاً □ ليس دائماً □ لا أعرف □

16- إلى أي مدى يكون فهمك للمحاضرات و الدورات السريرية عند ما تقدم بالإنجليزية فقط؟

□ 100-90% □ 89-70% □ 69-50% □ أقل من 50% □ صفر % □

17- هل يجب أن تكون المواد في مقرر الإنجليزية للسنة الأولى ذات صلة بالحقول الطبي؟ نعم لا إذا كانت الإجابة بلا تخطى السؤال التالي

18- يجب أن تكون المواد الإنجليزية في المقرر ذات الصلة بالحقول الطبي بنسبة

100-90% 89-70% 69-50% أقل من 50% صفر %

19- يجب على المحاضر استعمال مزيج من العربية و الإنجليزية لتوصيل مادته في المحاضرة.

أرفض بشدة أرفض لا رأي أوافق أوافق بشدة

20- ما رأيك في الدافع الرئيسي لاستعمال اللغة العربية في تدريس الطب؟ ((الرجاء ترتيب كل ما له صلة بالتتابع من الأكثر أهمية(1) إلى الأقل (6)))

لتمكن اللغة العربية لعوامل سياسية تأكيدات الهوية الثقافية لعوامل اقتصادية واجتماعية لعوامل تتعلق بأصول التدريس أخرى الرجاء كتابتها.....

21 - ماذا سيكون رد فعلك إذا كانت لغة التدريس واحدة من الآتي (الرجاء تحديد موقفك من كل وسيلة)

وسيلة التعليم	إيجابي جدا	إيجابي	محايد	سلبى	سلبى جدا	غير متأكد
العربية فقط						
الإنجليزية فقط						
العربية أكثر من الإنجليزية						
الإنجليزية أكثر من العربية						

22- ما هي المهارات اللغوية التي تعتقد بأنها الأهم في دراستك للطب؟(الرجاء ترتيبهم على هذا النحو 1 للأكثر أهمية 2 للهم 3 للأقل أهمية 4 للأدنى أهمية)
أ- العربية:-

الإصغاء التخاطب القراءة الكتابة

ب- الإنجليزية:-

الإصغاء التخاطب القراءة الكتابة

23- لماذا تعتقد أن التمكن من اللغة الإنجليزية ضروري لنجاحك في الدراسات الطبية؟ (يمكن إعطاء أكثر من إجابة)

لفهم المراجع الإنجليزية ومواقع الإنترنت والمجلات الطبية لفهم المحاضرات والدورات السريرية التي تدار بالإنجليزية الممزوجة بالعربية لفهم السمنارات والمؤتمرات التي تدار باللغة الإنجليزية لمواصلة الدراسات العليا في الخارج

24- أي المناهج الإنجليزية التالية تري بأنه الأفضل لتسهيل دراستك الطبية؟

لغة إنجليزية عامة في السنة الأولى ولا حاجة للغة متخصصة لغة إنجليزية عامة في السنة الأولى ولغة متخصصة مختارة في السنوات الدراسية التالية

إنجليزية متخصصة في السنة الأولى وإنجليزية عامة في السنوات اللاحقة إنجليزية متخصصة في السنة الأولى وبقية الأعوام التالية

25- هل تواجه أي صعوبة في فهم المصطلحات الطبية العربية؟

نعم قليلا ليس دائما

26- ما هي النسبة المئوية لفهمك للمفردات الطبية العربية؟

100-90% 89-70% 69-50% أقل من 50% صفر %

27- ما هو سبب صعوبة فهم بعضا من المصطلحات الطبية العربية؟

استعمال كلمات عربية غير شائعة ترجمة حرفية و ضعيفة فشل اللغة العربية في استيعاب المصطلحات الطبية ليس لدي فكرة

28- ما هي المهارات التي تحس بأنها أكثر أهمية ويجب على المبتدئين تحسينها؟ (الرجاء ترتيبهم على هذا النحو 1 للأكثر أهمية 2 للهم 3 للأقل أهمية 4 للأدنى أهمية)

أ- العربية:-

الإصغاء □ التخاطب □ القراءة □ الكتابة □

ب- الإنجليزية:-

الإصغاء □ التخاطب □ القراءة □ الكتابة □

29- يمكن للغة العربية استيعاب المصطلحات العلمية لأنها تستطيع صياغة الكلمات عن طريق الاشتقاق و التراكيب أو القياس.

ارفض بشدة □ أرفض □ لا رأي □ أوافق □ أوافق بشدة □

30- أختار المناسب

أستطيع قراءة مقالة طبية بالعربية في وقت أقل من الإنجليزية □

تستغرق قراءة مقالة طبية بالإنجليزية نفس المدة إذا كانت بالعربية □

31-من غير الممكن أن أبادر بطرح أسئلة وأفكار إذا كان المحاضر يستخدم اللغة الإنجليزية فقط.

ارفض بشدة □ أرفض □ لا رأي □ أوافق □ أوافق بشدة □

32-الوقت الذي أستغرقه في الدراسة أو تحضير بحث باللغة العربية مقارنة بالإنجليزية

أكثر □ نفس الوقت □ أقل □

33- عند ما تكون المحاضرة بالعربية فأنتي أستطيع تدوين ملخصات أشمل مما إذا كانت باللغة الإنجليزية.

ارفض بشدة □ أرفض □ لا رأي □ أوافق □ أوافق بشدة □

34-لزيادة معلومات الملخصات، يحتاج الفرد إلى الرجوع لوسائل مرجعية. إلى أي مدى هذه الوسائل متاحة

أ- بالعربية كافية □ غير كافية □ لا توجد □

ب- الإنجليزية كافية □ غير كافية □ لا توجد □

35- أواجه عند الرجوع إلى مرجع طبي باللغة الإنجليزية بعض المصاعب.

ارفض بشدة □ أرفض □ لا رأي □ أوافق □ أوافق بشدة □

إذا كانت الإجابة بنعم فالصعوبات هي:-

لغة السرد □ المصطلحات □ أخرى □ تحديداً

36- عند اختيار لغة معينة لتدريس الطب يجب توفير الآتي:-

أ- محاضر متدرب باللغة المختارة

ارفض بشدة □ أرفض □ لا رأي □ أوافق □ أوافق بشدة □

ب- الكتب الدراسية، المراجع، و كل الموارد الأخرى باللغة المختارة.

ارفض بشدة □ أرفض □ لا رأي □ أوافق □ أوافق بشدة □

ج- ترجمة و آلية للتحديث متواصلة

ارفض بشدة □ أرفض □ لا رأي □ أوافق □ أوافق بشدة □

37 - تختلف الترجمة العربية في المعاجم الطبية عما أتلقاه من المحاضرين في القاعة.

ارفض بشدة □ أرفض □ لا رأي □ أوافق □ أوافق بشدة □

38- تختلف ترجمة المصطلح الطبي في عدد من الكتب الدراسية و المعاجم.

ارفض بشدة □ أرفض □ لا رأي □ أوافق □ أوافق بشدة □

39- عند التدريس باللغة العربية قد يختلف المصطلح الطبي العربي باختلاف المحاضرين.

ارفض بشدة □ أرفض □ لا رأي □ أوافق □ أوافق بشدة □

40- هل تخطط لمواصلة الدراسات العليا بالخارج بعد التخرج؟

نعم □ لا □ لم أقرر بعد □

إذا كانت الإجابة بنعم، فهل ستعمل على تحسين لغتك الإنجليزية خلال تلقيك دراستك الطبية الحالية

نعم □ لا □ ربما فيما بعد □

41- أقرأ التالي ثم حدد النسبة/ النسب التي توضح فهمك و تذكرك لاحقا لهذه المصطلحات في كل لغة على حده.

Pectus excavation	الصدر المتكهف
Pleural sclerosis	تصلب جنبي
Placebo	دواء وهمي (غفل)
Hyperacusis	فرط حساسية الأذن للأصوات
Glosso pharyngeal nerve	العصب اللساني البلعومي
Hypoxia	نقص اكسجة
Immunosuppression	تثبيط مناعي
Retinopathy	اعتلال الشبكية
Endocrinology	علم الغدد الصماء
Osteopenia	تخلخل العظام

أ- العربية

100-90% أقل من 50% أقل من 50% 69-50% 89-70% 50% أقل من 50% صفر %

ب- الإنجليزية

100-90% أقل من 50% أقل من 50% 69-50% 89-70% 50% أقل من 50% صفر %

42- ما نسبة المصطلحات العلمية أو الطبية مقارنة باللغة العامة في صفحة من كتاب طب باللغة الإنجليزية؟

أكثر من 50% 50-40% 39-30% 29-20% 19-10% 9-5% أقل من 5%

هذه هي نهاية الاستبيان. إن مشاركتكم ومساعدتكم لي في أكمل هذا الدراسة يتلج صدري ويجعلني أكن تقديرا خاصا لكل فرد منكم. فشكرا لك مرة أخرى

بسم الله الرحمن الرحيم

FACULTY QUESTIONNAIRE

This questionnaire is designed to find out your attitude towards how you would like to teach medicine (in Arabic/English). Probably, it will take 15 to 20 minutes to complete it. The accuracy of the results is of paramount to the success of this survey. *It is critical that the possible answer(s) be given.* This questionnaire is **anonymous**. Your participation is **very important** and it will directly contribute to the success of the research.

You are requested to put a check mark \checkmark against your chosen response(s).



1. Tick what pertains to you

a-University

b- Gender

c- Nationality

Al- Gezira

Female

Sudanese

Islamic Omdruman

Male

Other Arab

Khartoum

Western

Other _____

d- Native Language

Arabic English Other specify _____

e- Medical Studies & Initial Training in Medicine

Arabic English Other specify _____

g- Experience

General : More than 10 years 5to10 years Less than 5 years None

Teaching:-

in Arabic : More than 10 years 5to10 years Less than 5 years None

in English: More than 10 years 5to10 years Less than 5 years None

h- Affiliation to Academies (A member of: -)

Arab Academies English-speaking Academies Other specify ____ None

i - Publishing (in medicine Books Research Reports Articles Other e.g. Internet/websites

j-

Publishing

Language

Arabic English

2- How important do you think English is to your students' current medical studies

very important important somewhat important unimportant

3- How important do you think English is to your students' future career?

very important important somewhat important unimportant

4- What percentage of reading assignments for your students are in:

a) Arabic 90-100 % 70-89 % 50-69 % Less than 50 % 0%

b) English 90-100 % 70-89 % 50-69 % Less than 50 % 0%

5- What language problems are your students currently facing in their academic studies ? (You may check more than one)

a) Arabic limited vocabulary poor grammar poor speaking skills poor listening comprehension slow reading speed poor writing skills poor reading comprehension other (specify)_____ .

b) English limited vocabulary poor grammar poor speaking skills poor listening comprehension slow reading speed poor writing skills poor reading comprehension other (specify)_____ .

6- What percentages of your textbooks for the courses you teach are in

a) Arabic? 90-100 % 70-89 % 50-69 % Less than 50 % 0%

b) English? 90-100 % 70-89 % 50-69 % Less than 50 % 0%

7- Do you ask your students to write reports and research in

a) Arabic?

always often occasionally never

b) English?

always often occasionally never

8- Do you ask your students to write answers to tests in

Arabic only English only Mixture of Arabic and English

9- Mastering a language cannot be attained through only studying it but using it in studying other subjects.

strongly disagree disagree no opinion agree strongly agree

10- Using one of these languages as a medium of instruction in university studies (You may check more than one)

a)Arabic

helps in doing research helps in international conferences builds cultural identity
encourages creativity enhances mastering the language builds up loyalty to other cultures
hinders writing textbooks helps writing textbooks facilitates understanding the content

b) English

helps in doing research helps in international conferences builds cultural identity
encourages creativity enhances mastering the language builds up loyalty to other cultures
hinders writing textbooks helps writing textbooks facilitates understanding the content

11- How do you present the course content in your oral lectures?

Arabic only Arabic but medical terms in English

Mixture of Arabic and English English only

12- How do you perform bedside teaching (clinical sessions or rounds)?

Arabic only Arabic but medical terms in English

Mixture of Arabic and English English only

13- In case of using Arabic in teaching medicine, what kind of Arabic do you use?

Standard Arabic Mixture of Standard Arabic and Sudanese Arabic Sudanese Arabic

14- If Sudanese Arabic is your chosen medium of instruction, what do you use

Common Sudanese Arabic Subset of Sudanese Arabic (regional dialect)

15- What language is used in your practical classes, labs, clinical sessions & rounds?

Arabic and arabicized medical terms Arabic but medical terms in English Mixture of Arabic and English English only

16- How do your students perceive the language used in

a) lectures

easy to follow ambiguous lack clarity difficult

b) clinical rounds

easy to follow ambiguous lack clarity difficult

17- Which of these methods do you think could be adopted in handling medical terms when teaching in Arabic? : (you may check some as combinations)

Translation (to turn the meaning into Arabic)

Transliteration (to represent the English term in Arabic alphabet)

Arabicization (to create an equivalent in Arabic)

18- Using a certain language in teaching medicine necessitates the availability of the following: -

a) A trained instructor in the chosen language.

strongly disagree disagree no opinion agree strongly agree

b) Textbooks, references and other resources in the chosen language.

strongly disagree disagree no opinion agree strongly agree

c) An ongoing translation and updating mechanism

strongly disagree disagree no opinion agree strongly agree

19- Does the English your students had in high school qualify them to understand lectures and clinical rounds when given in English?

yes a little not at all I don't know

20- How much do you expect your students to understand if the lecture/ the clinical rounds are presented in English?

90-100 % 70-89 % 50-69 % Less than 50 %

21- What might be the cause(s) of hardships in studying medicine in English?

Language-related terminology-related no idea

22- Should the materials in the freshman English course be relevant to the medical field?

Yes No (if no, skip the next question)

23-What percentage of English materials in a freshman course should be relevant to the medical field?

- 90-100 % 70-89 % 50-69 % Less than 50 %

24- Tick what you think a lecturer should do in delivering his lecture in Arabic? A lecturer should

- present the content in standard Arabic use simple Arabic use familiar Arabic terms interject the English term where appropriate conduct the lecture in a mixture of Arabic and English utilize more Arabic than English in giving the lecture maintain a balance between Arabic and English in the session always give medical terms in English

25- a) Do you think using Arabic in teaching medicine

- a cultural necessity a scientific necessity both or no need ?

b) What do you see as main reason(s) for the decision of using Arabic as a medium of instruction in the college of medicine? Please rank all those relevant in order from '1' downwards.

- empowerment of Arabic political factors cultural identity

- socioeconomic factors pedagogical(educational) factors

- other (please write) _____

26- How would you describe your students' attitude for each of the following?

#	Medium of Instruction	Very Positive	Positive	Neutral	Negative	Very Negative	Not Sure
1	Arabic only						
2	English only						
3	Much Arabic and Little English						
4	Much English and Little Arabic						

27- Which of the following language skills do you think are important than the others in your students' medical studies? (Rank them this way: 1=most important, 2= important, 3= less important, 4=least important. Rank all.)

a) Arabic listening speaking reading writing b) English listening speaking reading writing

28- Why do you think English language skills are needed for your students' success in medical studies? (You may check more than one)

Reading to understand medical references, Internet sites and medical journal articles Understanding the English mixed with Arabic in Arabic lectures and clinical rounds Understanding seminars and conferences conducted in English Future post-graduate studies abroad

29- Which of the following language skills do you feel are more important for freshmen to improve? (Rank them this way: -1=most important, 2= important, 3= less important, 4=least important. Rank all.)

a) Arabic listening speaking reading writing

b) English listening speaking reading writing

30- The current offered English at the college qualifies students in their medical studies and in pursuing future higher degrees.

strongly disagree disagree no opinion agree strongly agree

31- Which of the following English curricula for students do you perceive is the best one to facilitate your teaching?

General English in the first year, no need for specific English

General English in the first year, specific elective English in the following years

Specific English from the first year, general English through the following years

Specific English from the first year through the following years.

32- Do you face any problems in understanding arabicized medical terms?

yes a little not at all

- And your students? yes a little not at all

33-What is the percentage of your understanding of arabicized medical terms?

90-100 % 70-89 % 50-69 % Less than 50 %

- And your students?

90-100 % 70-89 % 50-69 % Less than 50 %

34- What is/are the cause(s) of difficulty in understanding some arabicized medical texts?

use of uncommon Arabic words poor and verbatim translations

Arabic language failure to accommodate the medical term no idea

35-

1. drowsiness	وسن
2. Infection	الخمج
3. pancreas	المعكلة
4. varicella	حمامق
5. apposition	مصاقبة
6. hematuria	بيبة دموية
7. complication	اختلاط
8. hemoglobin	اليحمور
9. calf	الربلة
10. prostatic hypertrophy	ضخامة الموثة
11. vehicle	سواغ
12. randomized controlled trial	دراسة مضبوطة معشاة

Indicate your familiarity with the Arabic translation of the above medical terms taken from Medical Updates Journal (Vol.1 No.1 July- Sep. 1997 & Vol.1 No.1 Spring 2000)

90-100% 70-89% 50-69% less than 50% 0%

36- Arabic can accommodate medical science terminology because new words can be formed by derivation, construction or analogy.

strongly disagree disagree no opinion agree strongly agree

37- Read the following terms and decide what percentages your students will understand and retain in case of each language

Pectus excavation	الصدر المتكفف
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Pleural scierosis	تصلب جنبي
Placebo	دواء وهمي (خفل)
Hyperacusis	فرط حساسية الأذن للأصوات
Glosso pharyngeal nerve	العصب اللساني البلعومي
Hypoxia	نقص اكسجة
Immunosuppression	تثبيط مناعي
Retinopathy	اعتلال الشبكية
Endocrinology	علم الغدد الصماء
Osteopenia	تخلخل العظام

a) Arabic

90-100% 70-89% 50-69% less than 50% 0%

b) English

90-100% 70-89% 50-69% less than 50% 0%

38- Students are less likely to ask questions, discuss or convey an idea if the instructor uses only English.

strongly disagree disagree no opinion agree strongly agree

39- The amount of time a student spends in studying/preparing his/hers studies in Arabic compared to English.

increases remains about the same decreases

40- In a class delivered in Arabic, a student may capture more lecture notes than when the class is in English.

strongly disagree disagree no opinion agree strongly agree

41- To expand the lecture notes, a student needs to access reference resources. How much of reference material is available in

e) Arabic

Much enough not enough none

f) English

Much enough not enough none

42- Consulting a medical reference in English causes me some difficulties.

strongly disagree disagree no opinion agree strongly agree

If so, the difficulties are

Language-related terminology- related unfamiliar terms other specify

43- The Arabic translations in a medical dictionary are different from what students had in class.

strongly disagree disagree no opinion agree strongly agree

44- Medical term translations are different in different textbooks and dictionaries.

strongly disagree disagree no opinion agree strongly agree

45- In using Arabic to teach medicine, different instructors may use different Arabic medical terms.

strongly disagree disagree no opinion agree strongly agree

46- What percentage(s) of scientific or medical terms compared to the common language is/are found in a page of a medical textbook in English?

More than 50% 40-50% 20-39% 10-19% 5-9% less than 5%

47- A nonnative of English high competency in the language

a) qualifies him/her to thoroughly master a subject taught in English

strongly disagree disagree no opinion agree strongly agree

b) helps him/her to convey thoughts and innovate in a specialty more than his/her native language.

strongly disagree disagree no opinion agree strongly agree

48- Rate your competency in using these languages in your teaching: -

a) Arabic

very high high medium acceptable

b) English

very high high medium acceptable

49- Check the appropriate

I can read a medical article in Arabic faster than in English.

I can read a medical article in Arabic in less time than in English.

A medical article in English will cost the same time as when it is in Arabic.

50- The percentage of practicing Arabicization in our college is

90-100% 70-89% 50-69% less than 50% 0%

This completes the survey. Your response is extremely significant, and I highly appreciate the fact that you have given me this great help to complete the study.

Again, thank you for your assistance!

بسم الله الرحمن الرحيم

الاستبيان

القصود من هذا الاستبيان هو معرفة رغبتك في ماهية اللغة التي ترى أن يدرس بها الطب

(العربية أو الإنجليزية)، وعلي الأرجح فإن ذلك سيستغرق ما بين ال 15 إلى 20 دقيقة. نجاح هذه الدراسة يعتمد على دقة إجاباتك وتضمنك لكل الأجوبة المحتملة. هذا الاستبيان بدون توقيع و ستبقى حقيقة أنك من المساهمين في البيانات التي سيجمعها سرية تماما. أن مشاركتك ضرورية جدا لأنها ستساهم بصورة مباشرة في نجاح هذا البحث.

فكل ما هو مطلوب منك هو أن تضع علامة √ بحاذة الإجابة المختارة:-

3- الرجاء أن تضع علامة √ في محاذة ما يناسبك:-

الجامعة ب- النوع ج- الجنسية

- الجزيرة نكر سوداني
 أمدرمان الإسلامية أنثي جنسيات عربية أخرى
 الخرطوم غربي
 أخرى

د- اللغة الأم

العربية الإنجليزية لغات أخرى تحديداً

هـ - الدراسة الطبية و التدريب

العربية الإنجليزية أخرى تحديداً

و- الخبرة

- 1- العامة: أكثر من 10 سنوات 5 إلى 10 سنوات أقل من 5 سنوات لا توجد
 11- في التدريس: بالعربية: أكثر من 10 سنوات 5 إلى 10 سنوات أقل من 5 سنوات
 بالإنجليزية: أكثر من 10 سنوات 5 إلى 10 سنوات أقل من 5 سنوات

ك- الانتماء للجمعيات و التجمعات المهنية التخصصية

عربية غربية أخرى بالتحديد

ل- تأليف ونشر: كتب تقارير بحوث مقالات أخرى (كشبكة الإنترنت أو شبكة محلية)

م- لغة النشر: العربية الإنجليزية

2- كيف ترى أهمية الإنجليزية بالنسبة للطلبة في:-

دراستهم الحالية للطب: مهمة جدا مهمة مهمة إلى حد ما غير مهمة

3- كيف ترى أهمية الإنجليزية بالنسبة للطلبة في:-

عملهم وتأهيلهم في المستقبل: مهمة جدا مهمة مهمة إلى حد ما غير مهمة

4- النسبة المئوية لفروض القراءة في دروس الطب هي:-

أ- بالعربية 90-100% 70-89% 50-69% أقل من 50% صفر %

ب- بالإنجليزية 90-100% 70-89% 50-69% أقل من 50% صفر %

5- ما هي المشاكل اللغوية التي يواجهها طلابك الآن في دراستهم الأكاديمية:-

أ- باللغة العربية

محدودية معرفة المفردات ضعف النحو والصرف ضعف مهارات التحدث باللغة ضعف ملكة الإصغاء وبالتالي الفهم بطء
 سرعة القراءة ضعف المهارات الكتابية عدم إدراك وفهم ما يقرأ أخرى تحديداً

ب- باللغة الإنجليزية

محدودية معرفة المفردات ضعف النحو والصرف ضعف مهارات التحدث باللغة ضعف ملكة الإصغاء وبالتالي الفهم بطء
 سرعة القراءة ضعف المهارات الكتابية عدم إدراك وفهم ما يقرأ أخرى تحديداً

6- ما هي نسبة الكتب الدراسية المقررة في منهجك:-

أ- بالعربية

90-100% 70-89% 50-69% أقل من 50% صفر %

ب- بالإنجليزية

90-100% 70-89% 50-69% أقل من 50% صفر %

7- هل تطلب من الطلاب كتابة تقارير وبحوث أو التعامل:-

- أ- بالعربية؟ دائما غالبا بين الحين و الآخر أبدا
- ب- بالإنجليزية؟ دائما غالبا بين الحين و الآخر أبدا

8- هل تطلب منهم الإجابة على أسئلة الاختبارات

- بالعربية فقط بالإنجليزية فقط مزيج من العربية و الإنجليزية

9- أجاده لغة ما لا تتم بدراستها فقط بل باستخدامها في دراسة مواد أخرى.

- أرفض بشدة أرفض لا رأي أوافق أوافق بشدة

10- استخدام إحدى هذه اللغات كوسيلة تعليم في الدراسات الجامعية(يمكن إعطاء أكثر من إجابة)

العربية:

تساعد في عمل البحوث تبني الهوية الثقافية تساعد في التمكن من اللغة تعيق تأليف الكتب المنهجية تساعد في فهم محتوى المادة

- تساعد في المؤتمرات الدولية تشجع على الابتكار تنمي الولاء للثقافات الأخرى تساعد على تأليف الكتب المنهجية

الإنجليزية :

تساعد في عمل البحوث تبني الهوية الثقافية تساعد في التمكن من اللغة تعيق تأليف الكتب المنهجية تساعد في فهم محتوى المادة

- تساعد في المؤتمرات الدولية تشجع على الابتكار تنمي الولاء للثقافات الأخرى تساعد على تأليف الكتب المنهجية

11- كيف تقدم محتوى المقرر التعليمي في المحاضرات الشفهية؟

- بالعربية فقط بالعربية ولكن المصطلحات الطبية بالإنجليزية مزيج من العربية و الإنجليزية بالإنجليزية فقط

12- كيف تدرس الحلقات و الدورات السريرية في المستشفيات؟

- بالعربية فقط بالعربية ولكن المصطلحات الطبية بالإنجليزية مزيج من العربية و الإنجليزية بالإنجليزية

13- في حالة استخدام اللغة العربية في تدريس الطب ما هو نوع اللغة التي تستعملها أو ستستعملها؟

اللغة العربية الفصحى مزيج من العربية الفصحى و العامية السودانية العامية السودانية

14- إذا كانت العامية السودانية هي الوسيلة التي تستخدمها أو ستستخدمها فما نوعها؟ العربية السودانية الشائعة(عربي الخرطوم)

اللهجات المحلية

15- ما هي اللغة المستخدمة في دروس المختبرات و الحلقات السريرية؟

- العربية فقط العربية ولكن المصطلحات الطبية بالإنجليزية مزيج من العربية و الإنجليزية الإنجليزية

16- ما رأي طلابك في اللغة المستخدمة في:-

أ- المحاضرات؟

- سهلة المتابعة غامضة وملتبسة ينقصها الوضوح صعبة

ب- الدورات السريرية؟

- سهلة المتابعة غامضة وملتبسة ينقصها الوضوح صعبة

17- أي من هذه الطرق ترى إمكانية استخدامها في معالجة المصطلحات الطبية باللغات الأجنبية عند التدريس بالعربية؟ (يمكن إعطاء

أكثر من إجابة)

الترجمة (تغير المعنى للغة العربية)

الحرفية (كتابة المصطلح الأجنبي بحروف عربية)

التعريب (نحت المصطلح العربي)

18- عند اختيار لغة معينة لتدريس الطب يجب توفير الآتي:-

أ- محاضر متدرب باللغة المختارة

ارفض بشدة أرفض لا رأي أوافق أوافق بشدة

ب- الكتب الدراسية، المراجع، و كل الموارد الأخرى باللغة المختارة.

ارفض بشدة أرفض لا رأي أوافق أوافق بشدة

ج- ترجمة و آلية للتحديث متواصلة

ارفض بشدة أرفض لا رأي أوافق أوافق بشدة

19- هل تؤهل الإنجليزية التي درسها طلابك في الثانوية العليا في فهم المحاضرات والدورات السريرية إذا قدمت بالإنجليزية؟

نعم قليلا ليس دائما لا أعرف

20- إلى أي مدى يكون فهم طلابك للمحاضرات و الدورات السريرية عند ما تقدم بالإنجليزية فقط؟

100-90% 89-70% 69-50% أقل من 50% صفر %

21- ما هي الأسباب التي يمكن أن تكون عائقا في تعلم الطب باللغة الإنجليزية؟

أسباب متعلقة باللغة أسباب متعلقة بالمصطلح لا أدري

22- هل يجب أن تكون المواد في مقرر الإنجليزية للسنة الأولى ذات صلة بالحقول الطبي؟ نعم لا إذا كانت الإجابة بلا تخطى

السؤال التالي

23- يجب أن تكون المواد الإنجليزية في المقرر ذات الصلة بالحقول الطبي بنسبة

100-90% 89-70% 69-50% أقل من 50% صفر %

24-أختار ما يجب علي المحاضر استعماله لتوصيل مادته بالعربية.

تقديم المحتوى بلغة عربية قياسية استخدام لغة عربية بسيطة استخدام مصطلحات عربية معتادة إقحام المصطلح الإنجليزي حيث

يناسب استخدام مزيج من العربية و الإنجليزية استخدام كثير من العربية و قليل من الإنجليزية عمل موازنة في استخدام اللغتين

إعطاء المصطلحات الطبية باللغة الإنجليزية

25- أ) هل ترى استخدام اللغة العربية في تدريس الطب ؟

ضرورة ثقافية ضرورة علمية الاثنين معا أو لا توجد ضرورة

ب)- ما رأيك في الدافع الرئيسي لاستعمال اللغة العربية في تدريس الطب؟ ((الرجاء ترتيب كل ما له صلة بالتتابع من الأكثر أهمية(1)

إلى الأقل (6)))

لتمكين اللغة العربية لعوامل سياسية تأكيد الهوية الثقافية لعوامل اقتصادية و اجتماعية لعوامل تتعلق بأصول التدريس

أخرى الرجاء كتابتها.....

26- ماذا سيكون رد فعل طلابك إذا كانت لغة التدريس واحدة من الآتي (الرجاء تحديد الموقف من كل وسيلة)

وسيلة التعليم	إيجابي جدا	إيجابي	محايد	سلبى	سلبى جدا	غير متأكد
العربية فقط						
الإنجليزية فقط						
العربية أكثر من الإنجليزية						
الإنجليزية أكثر من العربية						

27- ما هي المهارات اللغوية التي تعتقد بأنها الأهم لطلابك في دراستهم للطب؟ (الرجاء ترتيبهم على هذا النحو 1 للأكثر أهمية 2 للأهم

3 للأقل أهمية 4 للأدنى أهمية)

أ- العربية:- الإصغاء التخاطب القراءة الكتابة

ب- الإنجليزية:- الإصغاء □ التخاطب □ القراءة □ الكتابة □

28- لماذا تعتقد أن التمكن من اللغة الإنجليزية ضروري لنجاح طلابك في الدراسات الطبية؟ (يمكن إعطاء أكثر من إجابة)

لفهم المراجع الإنجليزية ومواقع الإنترنت والمجلات الطبية □ لفهم المحاضرات والدورات السريرية التي تدار بالإنجليزية الممزوجة

بالعربية □ لفهم السمنارات والمؤتمرات التي تدار باللغة الإنجليزية □ لمواصلة الدراسات العليا في الخارج □

29- ما هي المهارات التي تحس بأنها أكثر أهمية ويجب على المبتدئين تحسينها؟ (الرجاء ترتيبهم على هذا النحو 1 للأكثر أهمية 2 للأهم 3 للأقل أهمية 4 للأدنى أهمية)

أ- العربية:- الإصغاء □ التخاطب □ القراءة □ الكتابة □

ب- الإنجليزية:- الإصغاء □ التخاطب □ القراءة □ الكتابة □

30- هل تعتقد إن برنامج اللغة الإنجليزية الذي تقدمه الجامعة الآن يوهل الطلاب في أستيعاب مقرراتهم الطبية ومواصلة الدراسات العليا؟

ارفض بشدة □ أرفض □ لا رأي □ أوافق □ أوافق بشدة □

31- أي المناهج الإنجليزية التالية ترى بأنه الأفضل لتسهيل الدراسة الطبية لطلابك ؟

لغة إنجليزية عامة في السنة الأولى ولا حاجة للغة متخصصة □ لغة إنجليزية عامة في السنة الأولى ولغة متخصصة مختارة في

السنوات الدراسية التالية □

إنجليزية متخصصة في السنة الأولى وإنجليزية عامة في السنوات اللاحقة □ إنجليزية متخصصة في السنة الأولى وبقية الأعوام التالية □

32- هل تواجه أي صعوبة في فهم المصطلحات الطبية العربية؟

نعم □ قليلا □ ليس دائما □

وطلابك؟

100-90% □ 89-70% □ 69-50% □ أقل من 50% □ صفر %

33- ما هي النسبة المئوية لفهمك للمفردات الطبية العربية؟

100-90% □ 89-70% □ 69-50% □ أقل من 50% □ صفر % □

وطلابك؟

100-90% □ 89-70% □ 69-50% □ أقل من 50% □ صفر %

34- ما هو سبب صعوبة فهم بعضا من المصطلحات الطبية العربية؟

استعمال كلمات عربية غير شائعة □ ترجمة حرفية و ضعيفة □ فشل اللغة العربية في استيعاب المصطلحات الطبية □ ليس لدي فكرة

-35

1. drowsiness	وسن
2. Infection	الخمج
3. pancreas	المعتكلة
4. varicella	حمامق
5. apposition	مصاقبة
6. hematuria	بييلة دموية
7. complication	أختلاط

8. hemoglobin	اليحمور
9. calf	الرييلة
10. prostatic hypertrophy	ضخامة الموثة
11. vehicle	سواغ
12. randomized controlled trial	دراسة مضبوطة معشاة

وضح مدى استئنا سك بالمصطلحات الطبية أعلاه والتي أخذت من مجلة المستجديات الطبية (Vol.1 No.1 July- Sep. 1997 & Vol.1 No.1 Spring 2000)

□ 100-90% □ 89-70% □ 69-50% □ أقل من 50% □ صفر %

36- يمكن للغة العربية استيعاب المصطلحات العلمية لأنها تستطيع صياغة الكلمات عن طريق الاشتقاق و التراكيب أو القياس.

ارفض بشدة □ أرفض □ لا رأي □ أوافق □ أوافق بشدة □

37- أقرأ التالي ثم حدد النسبة/ النسب التي توضح فهم طلابك و تذكرهم لاحقاً لهذه المصطلحات في كل لغة على حده..

Pectus excavation	الصدر المتكهف
Pleural sclerosis	تصلب جنبي
Placebo	دواء وهمي (غفل)
Hyperacusis	فرط حساسية الأذن للأصوات
Glosso pharyngeal nerve	العصب اللساني البلعومي
Hypoxia	نقص اكسجة
Immunosuppression	تثبيط مناعي
Retinopathy	اعتلال الشبكية
Endocrinology	علم الغدد الصماء
Osteopenia	تخلخل العظام

العربية:

□ 100-90% □ 89-70% □ 69-50% □ أقل من 50% □ صفر %

الانجليزية:

□ 100-90% □ 89-70% □ 69-50% □ أقل من 50% □ صفر %

38- إذا كان المحاضر يستخدم اللغة الإنجليزية فقط فاشترك الطلاب في نقاش أو في أحياء الدرس بالأسئلة و الاستفسارات محدود.

ارفض بشدة □ أرفض □ لا رأي □ أوافق □ أوافق بشدة □

39-الوقت الذي يستغرقه الطالب في الدراسة أو تحضير بحث باللغة العربية مقارنة بالإنجليزية

أكثر □ نفس الوقت □ أقل □

40- عند ما تكون المحاضرة بالعربية فإن الطالب يستطيع تدوين ملخصات أشمل مما إذا كانت باللغة الإنجليزية.

ارفض بشدة □ أرفض □ لا رأي □ أوافق □ أوافق بشدة □

41-لزيادة معلومات الملخصات، يحتاج الطالب إلى الرجوع لوسائل مرجعية. إلى أي مدي هذه الوسائل متاحة

- أ- بالعربية كافية غير كافية لا توجد
- ب- الإنجليزية كافية غير كافية لا توجد
- 42- أواجه عند الرجوع إلي مرجع طبي باللغة..... بعض المصاعب.
العربية: ارفض بشدة أرفض لا رأي أوافق أوافق بشدة
الإنجليزية: ارفض بشدة أرفض لا رأي أوافق أوافق بشدة
إذا كانت الإجابة بنعم في أي من اللغتين فالصعوبات هي:-
لغة السرد المصطلحات غرابة الترجمة أخرى تحديداً.....
- 43- تختلف الترجمة العربية في المعاجم الطبية عما يستخدمه بعض المحاضرين في القاعة.
ارفض بشدة أرفض لا رأي أوافق أوافق بشدة
- 44- تختلف ترجمة المصطلح الطبي في عدد من الكتب الدراسية و المعاجم.
ارفض بشدة أرفض لا رأي أوافق أوافق بشدة
- 45- عند التدريس باللغة العربية قد يختلف المصطلح الطبي العربي باختلاف المحاضرين.
ارفض بشدة أرفض لا رأي أوافق أوافق بشدة
- 46- ما نسبة المصطلحات العلمية أو الطبية مقارنة باللغة العامة في صفحة من كتاب طب باللغة الإنجليزية?
أكثر من 50% 40-50% 30-39% 20-29% 10-19% 5-9% أقل من 5%
- 47- الكفاءة العالية لشخص ما في غير لغة الأم (كالإنجليزية مثلا)
أ- توهله لأستعياب تام لمادة تدرس بالإنجليزية
ارفض بشدة أرفض لا رأي أوافق أوافق بشدة
ب-تساعده في إبداء أفكاره والابتكار في تخصصه أكثر من لغة الأم.
ارفض بشدة أرفض لا رأي أوافق أوافق بشدة
- 48- قـيـم كفاءتك في استخدام هاتين اللغتين في تدريس منهجك:
أ-العربية: عالية جدا عالية وسط مقبولة
ب- الانجليزية: عالية جدا عالية وسط مقبولة
- 49- أختار المناسب
أستطيع قراءة مقالة طبية بالعربية أسرع من الإنجليزية
أستطيع قراءة مقالة طبية بالعربية في وقت أقل من الإنجليزية
تستغرق قراءة مقالة طبية بالإنجليزية نفس المدة إذا كانت بالعربية
- 50- أن نسبة ممارسة التعريب في الكلية التي أدرس فيها تمثل
100-90% 89-70% 69-50% 50% أقل من 50% صفر %

هذه هي نهاية الاستبيان. إن مشاركتكم ومساعدتكم لي في أكمل هذا الدراسة يتلج صدري ويجعلني أكن تقديرا خاصا لكل فرد منكم. فشكرا لك مرة أخرى.

APPENDIX B

Interview Questions for Instructors

The questions were:

- What were the drives of changing the medium of instruction into Arabic?
- Have the students' competencies in language a role in the decision of the change?
- Has the faculty been trained to cope with the change? What about the students?
- What kind of language do students use in doing tests?
- What are the advantages and disadvantage of arabicization?
- What are the problems that face you as an implementer of this policy?
- What do you think of this big change?

Interviews

Interviewee # 1

I think we are trying to find our identity. Besides, the students who join the university lack good command of English which makes it difficult to meet the challenges they face in studying medicine in English. We, as instructors, have not been given a chance to get involved in making the decision of arabicization and the students were not oriented to accept the change. At our section, arabicization has been left to individual initiatives. Despite the difficulties we encounter, but the results are encouraging. We use Arabic and English in the tests given to the students and that students are given the choice to use either.

Arabicization is beneficial to students because they understand lectures better than in English but there are some problems like scarcity of Arabic references and terms in Arabic are not consistent. There are various differences among books in Arabic and among the instructors in handling the Arabic terms. I think for a successful change, we should prepare the instructors, unify terms, procure university textbooks and have translation done by specialized teams.

Interviewee # 2

A political drive might be behind the decision of arabicization. As instructors we need more time to prepare lessons in Arabic, besides, university libraries lack Arabic references and if they are found, we face the estrangement of the language used in them. We need Sudanese Arabic references and our experience in this university is positive and it is reflected on our students because they understand better in Arabic. We offer tests in Arabic and the terms in English. One of the advantages of arabicization is the depth of the students' understanding of the Arabic medical term due to the denotation of Arabic term. To have a successful process, we need to avail Arabic references locally with their English equivalents.

Interviewee # 3

I feel that we have done many things in our university to bring arabicization to the level you see. Translation has been done by the instructors themselves. Three workshops were held at the Developing Medical Education Institute- University of Khartoum. Now, we witness an increase in the instructors' acceptance of arabicization. We had a workshop for evaluating our university experience. Some of our instructors visited Syria to see its experience. We are translating different branches of medicine and we give tests in Arabic and English. English curriculum at the university level does not have well identified goals.

Interviewee # 4

Tests in the first three years at the Islamic University are in Arabic while the following years most of the lectures besides the tests are administered in Arabic. Generally, English competencies among students are very moderate and Arabic textbooks are not enough....I think we need to work on preparing instructors, unifying and sudanizing the Arabic medical terms. The advantages of arabicization could be seen in the success of the university graduates in a preparatory test for post graduate studies over those whose studies were in English.

Interviewee # 5

The drive for arabicization is not a cultural necessity but it has been driven by political interests. First, instructors must be well trained to teach in Arabic. Arabic is our mother tongue and it is means for development. Unfortunately, students' competencies in Arabic and English are weak due to the deterioration of general education. They lack basic science knowledge. Tests and tutorials are in English except few. We need an understandable Arabic translation. The difficulties we face are the refusal of some to adhere to this change, difficulty in teaching due to deficiencies in languages, the feeling

of mandatory of the change and add to this medical education failure in developing self reliance. Students are also afraid of unknown future for them and if they are going to lose if they are considered second to those trained in English.

Interviewee # 6

University of Gezira has contributed in arabicization by translating 17 books and 40 are in the print shop, participated in many pertaining workshops. Arabicization of medicine leads to address rural areas hygienic problems, besides; arabicization helps students to understand better. Nonetheless, there are the problems of many varieties for an Arabic medical term, deterioration of English, students who sat for special Arabic which indicates their low competency in Arabic. In addition to the feeling of the students that not all instructors are in favor of arabicization, the inconsistency and sarcasm they experience under the supervision of senior physicians trained in English

Interviewee # 7 **Dr. Abdelmonim Sahal**

My experience in arabicization started before starting it in University of Khartoum. I was asked to teach anatomy in some hygienic colleges e.g. Medical Labs College, Nursing College and Hygienic College where anatomy was delivered in Arabic. That was a limited experience until we were asked to prepare ourselves to teach medicine to students after a year, after the students finished their first year and started their second year when they began studying medicine. In the same year, we were asked to teach the students who were starting their second year in the Islamic University of Omdurman, University of Kordofan and Kassla University. This was a practical experience in arabicization of medical studies. In the same year, we went on a trip sponsored by WHO to Syria to familiarize ourselves with arabicization experience in Syria. We visited Damascus University while other delegations went to other Syrian universities and Iraq. Our visit was 10 days. During these days, we met individuals interested in arabicization. We visited the Arabic Center for translation. We also visited basic medical sciences sections in the college of medicine, Damascus University and we visited the print shop, the library, met the chancellor of the university, the dean of the medical college, talked to all sections head, and attended lectures in order to have a complete idea about the effect in these sections using Arabic in teaching medicine. When we returned, we wrote about our visit impressions and after a year of teaching we wrote another report about our teaching experience. In our report on the visit to Syria, we mentioned that we were not aware that arabicization started in 1919 at the beginning of the university. Another thing we learned was that most of the faculty members

studied medicine in Arabic before they had their post-graduate studies in languages other than Arabic. This was an important observation they told us about. Studying medicine in Arabic had not hampered their further studies in America, Germany and France using other languages than Arabic. Another observation tied to this was that students were self-studying medicine in other languages based on their cultural orientations i.e. simultaneously with Arabic; they were reading books in English, German or French. We included in our report that a university textbook equivalent to the recommended textbook was used. This textbook was written by the instructor who was responsible for teaching the subject, printed by the college and sold for the student for a reasonable price. Our comment was that the textbook was written by the same individual who teaches the course. We highlighted that it would limit students to a certain source subjected to self-preferences and knowledge of the individual and thus it would weaken the subject. Though foreign books were available but not all students were using them. Some concentrated on the university textbook and make their success. We reported that current Syrian arabicization experience limited access of students to knowledge in its wide meaning. In spite of the early start of arabicization in Syria, the presence of the center for translation, we found and after we met those visited other Syrian universities that written textbooks were not up to the duration of the experience. They were very few to depend on in teaching medicine. For example, we found only two books to teach physiology, one was written and the other was a translation, while anatomy had one. We felt that the number of books was not equal to the exerted efforts. Our visit was early in the 90s and arabicization was there from 1919, nonetheless, it appeared to us as there was no definite policy followed in the arabicization process. We asked, what it was.... arabicizing, translating or what....that was not clear. There were differences and variations in the terms used. I had an experience in that when I attended a lecture in anatomy followed by a practical session on the same topic for the same class but the instructors were different. Both of them belonged to the same section. They talked about the same topic but used totally different terms. I asked the head of the section who happened to be one of the two instructors about the differences I noticed. He attributed that to the fact that each of them depended on references different from the other and may be also different dictionaries due to lack of agreement on one dictionary. At the time, the Unified Arabic Dictionary has been there. This dictionary is well known in the Arab world as adopting the Syrian terms as the result of Dr. Hythem, a Syrian, being the head of the dictionary writing committee. The question that came up

was if the Syrians who influenced the Unified Arabic Dictionary did not use it due to the idea that it contains unfamiliar terms, what would be the stand of other Arab countries. Syrians used more often Hitti's dictionary than the Unified Arabic Dictionary which the claim considered it Syrian in its entirety. This was one of the problems we reported. In summary, we felt the problems in the Syrian experience were: low number of arabicized or translated books, and lack of unified policy for arabicization or translation. What I meant was that translation is different from arabicization and both are different from transliteration. There was no adherence to one of them. An example is the word cytoplasm when transliterated it will be sitoplasm but when translated, the equivalent is *huela*, arabicization means finding a substitute and this a lingering problem up to now. These were the apparent problems we noticed in our visit to Syria. The second report was about our personal experience in using Arabic as a medium of instruction in University of Khartoum and other universities. Most of the instructors faced difficulties due to their background and training in English, the scarcity of references, lack of familiarity to Arabic terms, and shortish of time for translation. Instructors found themselves compelled to translate only the lecture they would deliver the next day or the other. This did not enable them to have the complete picture of a system. Thus, the instructor won't be aware of the whole course unless he finishes it. This had created problems when an instructor was asked about a lecture he delivered two days ago or something related to an upcoming. Instructors failed often to recall something, he or she could not find the time to grasp and in a language he had not been taught or trained in. Instructors were not able to easily translate due to the scarcity of references. In translating a lecture, an instructor may rely on two books which may be different because one is a Syrian and the other is Iraqi. The third problem concerned students. There were no references for them to read; instead they read papers provided by their instructors. Instructors may spent a night or two preparing a paper which lack the supportive means to turn out for the students to use. There was not a supportive system like printers etc to facilitate the production of these papers. Students were left only to the notes that they could write in the lecture. This was exactly what we noticed in Syria and reported. Students exposed to limited amount of information provided by their instructor whose interest may be in or favors a slice of the syllabus. We thought this would curtail the learning process. In summary, lack of enough references was a big problem. Nonetheless, in this experiment, which had the said negatives, there were positive things we noticed. There were two groups, a group being taught medicine in

English in 1st year, 2nd year, and at the time they were in third year and the other group was in 2nd year and it was their 2nd year studying medicine in Arabic. We were teaching the two groups, the one in 3rd year (in English) and the other in 2nd year (in Arabic). Comparing these two groups, we found that class participation among 2nd year students studying in Arabic was much greater than 3rd year students who were studying in English. Opposite to our expectations since 3rd year group had much more exposure than 2nd year and it should have shown more involvement than 2nd year students. Another thing, 2nd year students were more outspoken and faster in memorizing the subject than 3rd year. For example, if you taught a lesson today followed by a practical class the second day, 2nd year students would be well prepared and much involved. In tests, especially in essay questions, the quantity of 2nd writing was unmatched by 3rd year students who studied in English. These three advantages were very clear: class participation in lectures and labs, the fast review and retaining of lessons, plus writing extensively on tests- these were advantages we must admit. We conducted a small scale test on the denotation of English and Arabic terms to students. We chose some Arabic medical terms and their equivalents in English. We discovered that Arabic terms were clear, gave a clear denotative picture and the students could retain them much more than English. One of the examples was that we gave students this Arabic medical term "*gosniyat el- asabe 'a el-Sathyah*" and then we asked them later about it and they could easily explain the term. Then, we gave the English equivalent "flexural digits superficial" and followed the same as Arabic. The students could explain it after some time. We tried to explain that and we found that these three words in the term do not assist in denoting an image that students may use in remembering the meaning. The words were new to them. They had not had them in their earlier studies at the university or in high school. We concluded from our limited experiment that terms in Arabic could denote impressions that English would fail to imitate. We think if the problems mentioned in this interview are solved, arabicization will be more of a help to students in studying medicine. In brief, this was my encounters with arabicization unless you have other questions.

APPENDIX C

A Letter

University of Leicester

School of Education, 21 University Road, Leicester LE1 7RF, United Kingdom

السادة الأفاضل رواد أشرف المهن:

هناك مثل جميل يشبه العقل البشري بالمظلة حيث يقول: "أن العقل البشري شبيه بالمظلة- ليكون مفيدا يجب أن يكون مفتحا". وأنت واحد من ضمن الأفراد الذين يملكون عقولا منفتحة والذين أطلب مساعدتهم في إنجاز بحث حول تعريب الدراسة بكليات الطب في السودان. وأنني أرجو المشاركة بأفكارك وذلك بإكمال الاستبيان المرفق، ولك مطلق الحرية في اختيار لغة الرد على الاستبيان باللغة العربية أو اللغة الإنجليزية. تستغرق مجمل عملية الرد على الاستبيان 20 دقيقة تقريبا من وقتك الثمين لتدلي بدلوك في هذا الموضوع الهام. المشروع جزء أساسي من رسالتي للحصول على درجة الدكتوراه في اللغويات التطبيقية من جامعة ليستر بالمملكة (والغرض من رسالتي هو معرفة كيف يؤثر تعريب الطب في أداء <http://www.leicester.ac.uk> المتحددة) المحاضر في توصيل مادته و كذلك تأثيره على دارسي الطب ومستقبلهم. سيتناول المسح موضوع مزايا و عيوب استخدام إحدى اللغتين: العربية أو الإنجليزية في تدريس الطب. وأمل أن أوفق في عكس وجهة نظرك في التعريب وكيفية تنفيذه.

هذا المشروع تتويج لأكثر من أربعة سنوات ونصف من الدراسة. وأتوقع أن تكون نتائجه مثيرة و ممتعة. وأود أن أؤكد لك بأن مشاركتك ستبقى سرية و ستظل البيانات مجهولة المصدر و ستستخدم فقط في أغراض هذا البحث. وبعد الفراغ من الرسالة سأقدم لأي شخص شارك في الاستبيان نسخة من ملخص النتائج إذا طلب ذلك. عزيزي..... أنك ستكون شريكا مهما في هذه الرسالة، و مشاركتك بالطبع سيكون لها أثرا طيبا في نجاح هذه الدراسة. فالشكر موصول لك..

To the pioneers of the most honorable trade:

A human brain is like a parachute. It is not beneficial unless it is open. You are one of those open minds that I need sincerely their assistance in completing a study about arabicization of medical colleges. I request your participation with your rich experience in answering the attached questionnaire.

The process may take 20 minutes of your valuable time to reflect your opinion about this important issue. The questionnaire is an essential, integrative part of a thesis to obtain a doctorate degree in applied linguistics from the University of Leicester in Britain (<http://www.leicester.ac.uk>). The drive for the study is to investigate the impact of arabicization on your delivery of instruction and on your medical students' studies and future careers. The questionnaire is looking into the advantages and disadvantages of using Arabic or English in teaching medicine. Hopefully, it mirrors your perceptions about arabicization and its implementation heading for a clarified, crystallized stance.

This project is a culmination of four years and half of study. Its findings are expected to be exciting and sapid. I would like to assure you that your participation will be anonymous and thus the data of this questionnaire. The data will be used **only** for the purpose of this study. Participants will be sent the results at the end of the study if they request that. My dear.... you will be an important partner of this study and your participation will have a supportive impact on the success of it. Thanks.

Issam E. Suliman,
P.O.B. 4190, Saudi Aramco, RT 31311,
رأس تنورة 31311، المملكة العربية .
Saudi Arabia

عصام الدين الفادني سليمان
ص.ب. 4190 شركة أرامكو السعودية

APPENDIX D

Students' Comments on Questionnaire

Question 5:

What language problems are you currently facing in your academic studies?

(You may check more than one)

a) Arabic

limited vocabulary poor grammar poor speaking skills poor listening
comprehension slow reading speed poor writing skills poor reading
comprehension other (specify)_____ .

b) English

limited vocabulary poor grammar poor speaking skills poor listening
comprehension slow reading speed poor writing skills poor reading
comprehension other (specify)_____

Comments:

1. Some Terms are not known and they may be more difficult than English terms. (trans.)
2. Limited exposure to Arabic terms, slow reading, weakness in English speaking skills. (trans.)
3. Some Arabic medical terms are weird e.g. *Sagab* (trans.)
4. The chosen Arabic medical terms corresponding to the English ones do not relate to Arabic. (trans.)
5. Some Sudanese doctors cannot pronounce properly.
6. The terms are not common words in Arabic.
7. Difficulty of understanding and pronouncing some Arabic medical terms (trans.)
8. Some of the Arabic words in medical books are difficult to understand. (trans.)
9. Difficult to connect topics with each other & difficult also and wrong to discuss clinical rounds in Arabic in front of the patient.
10. Sometimes the translation of English terms into Arabic results in very difficult Arabic words. (trans.)
11. Most of the reference and translated terms into Arabic are of Syrian dialect, not standard Arabic. (trans.)
12. We have not got familiarized with Arabic terminology due to lecturers' language preferences. (trans.)
13. Terms were translated into strange difficult forms. (trans.)
14. Arabic should be used where English poses difficulty. (trans.)
15. In use of English, difficult terms are used, though easier ones could be used, besides; inability in pronouncing English terms properly which poses difficulties in understanding and writing. (trans.)
16. Limited knowledge and understanding of scientific terms. (trans.)

Question 11:

In case of using Arabic in teaching medicine, what kind of Arabic may your teachers use?

Standard Arabic Mixture of Standard Arabic and Sudanese Arabic Sudanese Arabic

-If Sudanese Arabic is your teacher's medium of instruction, what does she/he use

Common Sudanese Arabic subset of Sudanese Arabic (regional dialect)

Comments:

17- It is worth mentioning that those who are taking care of arabicization in the university are Arabs (Syrians & Iraqis) who have created a problem in understanding by the language they use.

Question 20:

What do you see as a main reason for using Arabic as a medium of instruction in the college of medicine? Please rank all those relevant in order from '1' downwards.

empowerment of Arabic political factors cultural identity
socioeconomic factors pedagogical factors other (please write)_____

Comments:

- 18- Attrition of specialists and highly qualified instructors
- 19- Understanding Arabic is more than English. (trans.)
- 20- One's understanding is much better in his mother tongue than a foreign language ,he does not read or write well. (trans.)
- 21- Incompetence in English language. . (trans.)
- 22- Psychological factors. (trans.)
- 23- To enforce Arabic language. (trans.)
- 24- It is the normal course of change that occurs in all spheres. (trans.)
- 25- It helps in better understanding. (trans.)
- 26- It eases understanding. (trans.)
- 27- For religious reasons and Arabic is very important
- 28- Human brain can understand any material, scientific or non-scientific, in his mother tongue in a better way than any other language. He can use it to express himself in a very high precision where he may use another language inaccurately and which may mislead others and understand his message differently. Here, we find medicine is taught in Germany in German, in Japan

is Japanese, in France is French, and so on. With the exception of the Arabs who are currently followers of the British and Americans civilizations.

Nonetheless, English should be used as a second language in teaching medicine due to its importance in connecting through the Internet Arab doctors with their colleagues in other countries and other resources. (trans.)

29- Quick understanding and clarity. (trans.)

30- To enable medical students to understand medicine correctly through his mother tongue. (trans.)

31- Returning the rights to the owners. (trans.)

32- Arabic language is the main language of instruction in education from the beginning thus it should continue since understanding is quicker and time saver. However, this does not mean that terms could not be in English. (trans.)

33- There is a psychological barrier between you and a language which is not yours. (trans)

Question 23

Why do you think English language skills are needed for your success in medical studies? (You may check more than one)

Reading to understand medical references, Internet sites and medical journal articles

Understanding the English mixed with Arabic in lectures and clinical rounds Understanding seminars and conferences conducted in English

Future post-graduate studies abroad

Comments:

34- Books of Ibn Sinna and Ibn-al-Haythem and other former scholars were very poor if you consider that none has been added to them as the West did to its old books. They developed them while the Arabs continued as translators. If the origin is in English, why do not we read the origin and we translate it ourselves. (trans.)

35- Not for any one but for the English language is more easy to understand than Arabic.

Question 28

Which of the following language skills do you feel are more important for freshmen to improve? (Rank them this way: 1=most important, 2= important, 3=less important, 4=least important. Rank all.)

a) **Arabic**

listening speaking reading writing

b) **English**

listening speaking reading writing

Comments:

36- Available and it does not need development.

Question 34

To expand the lecture notes, you need to access reference resources. How much of reference material is available in

g) Arabic

Much enough not enough none

h) English

Much enough not enough none

Comments:

37- I think Arabic language is the most comprehensive and the most beautiful accompanied with the references and capable instructors who can offer current beneficial information. (trans.)

38- Arabic language is comprehensive but there is a lack of references that are easily understood. (trans.)

APPENDIX E

Educational Statistics of Education in the Sudan

Table (49) Development of Pre-school Education during the period (1989/90-1999/2000)

Year	No. of Institutions	No. of Children	No. of Teachers
1989/90	1650	106479	2983
1999/2000	7991	349306	1281
Growth rate	17%	12.6%	15.5%

Source: FMOE, General Directorate for Educational Planning

Table (50) Development of Basic Education during the period (1989/90-1999/2000)

Year	No. of Schools	No. of Pupils	Teachers	Pupil-Teacher Ratio
1989/90	7720	2076055	45349	38:1
1999/2000	11982	3137494	117151	27:1
Growth rate	4.5%	4.2%	8%	

Source: FMOE, General Directorate for Educational Planning

Table (51) Development of Secondary Education during the period (1989/90-1999/2000)

Year	No. of Schools	No. of students	Teachers	Students/Teacher Ratio
1989/90	568	270455	6945	1:39
1999/2000	1694	401424	21114	1:19
Growth rate	11.4%	4.8%	12.1%	

Source: FMOE, General Directorate for Educational Planning

Exam Result
No. Of those who sat,
passed
and percentage by sort of
Education and Status

1989/90

عدد الجالسين والناجحين والنسب
 حسب نوع التعليم

المنوية للنجاح
 والمساق

نسبة الناجحون	الناجحون	الجالسون		نوع التعليم	القسم
				Type of Education	الثانوي
72.1	31025	43020	Governmental	المدارس الحكومية	الأكاديمي
36	2906	8061	Public & private	المدارس الشعبية الخاصة	Academic
48.8	30790	63066	Teacher Union	اتحاد المعلمين	Secondary
73	19703	26970	Irregular	المنازل	
59.8	84424	141117	total	المجموع	
52.5	3320	6312	Commercial	التجاري	الثانوي
52	1478	2842	Industrial	الصناعي	الفني
71	246	346	Agriculture	الزراعي	technical
61.5	24	39	Home Economics	النسوي	Secondary
53.1	5068	9539	total	المجموع	
59.4	89492	150656	Grand Total	المجموع الكلي	

Source: Educational Statistics, Academic Year 1989/90. Republic of the Sudan,
 Ministry of Education, Educational Planning, Section of Educational Statistics

1990/ 1989	1989/ 1988	1988/ 1987	1987/ 1986	1986/ 1985	Academic Year	السنة المدرسية	القسم
					Sort of FD.	نوع التعليم	
72.1	67.9	41.1	70.6	79.3	Governmental	المدارس الحكومية	الثانوي
36.1	33.3	31	30.3	35.5	Public & private	المدارس الشعبية الخاصة	الأكاديمي
48.8	42.8	51	48.5	55	Teacher Union	اتحاد المعلمين	Academic
73.1	68.5	74.1	70.1	77.3	Irregular	المنازل	Secondary
59.8	55	62.4	59.8	67.5	total	المجموع	
52.6	44.5	55.6	53.7	59.6	Commercial	التجاري	
52	44.1	64.3	57	69.7	Industrial	الصناعي	الثانوي
71.1	66.6	59.3	59.2	80.9	Agriculture	الزراعي	الفني
61.5	49.5	69	69.1	79	Home Economics	النسوي	technical
53.1	45.3	58.4	54.9	63.4	total	المجموع	Secondary
59.4	54.3	62.1	59.5	67.1	Grand Total	المجموع الكلي	

Source: Educational Statistics, Academic Year 1989/90. Republic of the Sudan,
 Ministry of Education, Educational Planning, Section of Educational Statistics

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