

CLASSIFICATION OF SCIENCE IN THE IHSHA' AL-'ULUM (ENCYCLOPEDIA OF SCIENCE) AL-FARABI (870-950 AD)

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Abstract

The purpose of this writing is to find out the classification of knowledge in the Book of Ihsha' al-'Ulum Al-Farabi (870-950 AD). The study discussed how the classification of science in Al-Farabi's work. The method used is content analysis on a book written by Al-Farabi, namely Kitab Ihsha' al-'Ulum. The discussion of the book reveals that it does not state that there is a dichotomy of the sciences. Al-Farabi, only does division or classification of knowledge both ontology, epistemology and axiology. Al-Farabi, mentions various terms that are almost the same but semantically contain hierarchical meanings. The term is taqsim/aqşam or division, shinfun/ashnaf or part and juz'un/ajzaun or the smallest part. This illustrates that what al-Farabi did was collect and calculate (Ihsha') the diversity (ta'did) of knowledge in his time and then detail (tafsil) these sciences down to the smallest part so that the levels (maratib) of knowledge were known. Al-Farabi divides knowledge into two parts, namely: Theoretical Sciences (al-'Ulum al-Nadzoriyah), and Practical Sciences (al-'Ulum al-'Amaliyah wa al-Falsafatu al-Madaniyah). This division can be seen from the division of knowledge into five articles which describe these sciences into theoretical and practical terms and Practical Sciences (al-'Ulum al-'Amaliyah wa al-Falsafatu al-Madaniyah). This division can be seen from the division of knowledge into five articles which describe these sciences into theoretical and practical terms and Practical Sciences (al-'Ulum al-'Amaliyah wa al-Falsafatu al-Madaniyah). This division can be seen from the division of knowledge into five articles which describe these sciences into theoretical and practical terms.

Keywords: Dichotomy; Aristocrat; Philosphe.

INTRODUCTION

The tradition of classifying science into the categories of religious and non-religious sciences is not something new, Islam has known the tradition of classifying science for more than a thousand years ago. In the treasury of Islamic scholarship, several classic works have been found which discuss the classification of knowledge. It's just that this classification has experienced a shift in meaning towards the dichotomization of science, namely separation, conflict and hostility. This shift became clearer when the Western secular education system was introduced to the Islamic world through colonialism, a very strict dichotomy between religious and non-religious sciences occurred. Although initially this dichotomy did not cause too many problems in the Islamic education system (Mustofa, 2018).

This dichotomy is heightened when there is a denial of the validity and scientific status of one science over another. Conservative religious people view non-religious science as something new, or it is forbidden to study it because it comes from infidels. While supporters of non-religious science regard religious science as mythology, and nonsense because it does not speak about empirical facts. In fact, the problem of this dichotomy has created gaps with regard to scientific sources, scientific objects that are considered valid, disintegration of the scientific classification system, regarding scientific methodology, and the difficulty of integrating human experience (Durrotun Nashah, 2022).

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In the era of classical Islamic civilization, scholars have classified science into two major groups, namely, religious knowledge and non-religious science. They named the science of religious knowledge with various terms, such as, al-'Ulum ad-Diniyah, al-'Ulum an-Naqliyah, al-'Ulum asy-Syari'ah, al-'Ulum al-Islamiyah and al-'Ulum al -Araby. The religious sciences include interpretation, hadith, kalam science, jurisprudence, and tasawuf. Meanwhile, the non-religious sciences are called by the terms, al-'Ulum ad-Dunyawiyah, al-'Ulum al-Aqliyah, al-'Ulum ad-Dakhilah, al-'Ulum al-Ajam and al-'Ulum al-Awail . These sciences include Arabic, history, philosophy, medicine, astronomy, mathematics, optics, chemistry, physics, cosmography, and so on (Yatim, 2002).

This paper attempts to map an Islamic classic work with the scientific classification genre. The works are: *Kitab Ihsha' al-'Ulum* (Encyclopedia of Science) by al-Farabi (870-950 AD). The choice of subject for this paper is because the *Kitab Ihsan ul-Ulum* (Encyclopedia of Science) is known in the West as *De Kientfis*, which is the best work of a Muslim scientist who has made many contributions to the world of education. The track record of travel history in studying al-Farabi (870-950 AD) is something valuable and important in the world of modern Islamic knowledge to motivate the millennial generation in the digital era to study classic books about Muslim scholars. This writing study discusses how Al-Farabi's expression in classifying knowledge in his essay *Kitab Ihsha' al-'Ulum*.

RESEARCH METHOD

The research method used in reviewing this book is to conduct qualitative research based on content analysis where every expression in the book is deeply understood and analyzed on the research subject studied. Content analysis is a qualitative research technique emphasizing the constancy of communication content, the meaning of communication content, the reading of symbols and the meaning of content in symbolic interactions that occur in communication (Burhan Bungin, 2015).

RESULT AND DISCUSSION

Short Biography of al-Farabi (870-950 AD)

Historians differ on the origins of al-Farabi's descendants (870-950 AD). Ibn Abi Usaybi'ah (1203–1270 AD) in his book, *'Uyun al-Anba' fi Tabaqat al-Atibba'* says that the full name of al-Farabii (870-950 AD) is Abu Nasr Muhammad bin Muhammad bin Uzlagh bin Tharkhan. Ibn Khallikan (1211-1282 AD) mentions in the *Book of Wafayat al-'A'ayan* the full name of al-Farabii (870-950 AD) is Abu Nasr Muhammad bin Tharkhan bin 'Uzlagh (Al-Farabi, 1906). While al-Qifthiy called him Abu Nasr Muhammad bin Muhammad bin Tharkhan, this name was approved by al-Baihaqy (994-1066 AD). Meanwhile, Ibn Nadhim (d. 990 AD) in *Kitab al-Fihrasat* mentions Abu Nasr Muhammad bin Muhammad Ibn Tharkhan. Sha'id al-Andalusyi (1029-1070 AD) in the *Book of Tabaqat al-Umam* mentions Abu Nasr Muhammad bin Muhammad Ibnu Nasr, and in the same book it is also called like that (Zayid, 1962). However, they still agree that his name is Muhammad, although they still have different views about his lineage. Meanwhile, in Europe, al-Farabi (870-950 AD) was better known as Alfarabius or Avennasr (Ash-Sharqawi, 1986).

Al-Farabi (870-950 AD), was born in Wasij Farab District (known as Otrar) in Transoxiana (now Uzbekistan), in (257 H/870 AD) (Al-Farabi, 1906) The translators of the works of al-Farabi (870-950 AD) It is generally agreed that al-Farabi (870-950 AD) was of Persian descent and was born in Turkii. His father was a warlord of Persian blood and married a woman of Turkestan nationality. Later he became an officer in the Turkestani army. Because of this marriage, Al-Farabi (870-950 AD) is said to be of Turkestan descent and is sometimes said to be of Iranian descent (Sudarsono, 2004, p. 30). The name of al-Farabi (870-950 AD) is attributed to the Faraba area, namely the settlement area in Turki. However, there are those who say that the attribution comes from Farabaya, namely the Khurasan area, it's just that this view is seen as weak because his name is al-Farabi (870-950 M) not Farayabi (Rosental, 1968).

Ibn Khallikan (1211-1282 AD), said that al-Farabi (870-950 AD) died in 339 H/950 AD in Damascus at the age of 80 so that it can be estimated that al-Farabi (870-950 AD) was born around 259 H/870 M. Not much information tells about his youth so that the life of al-Farabi (870-950 AD) is considered mysterious, but what is revealed a lot is the period of his travels and wanderings from one country to another after he was fifty year. One thing that is very prominent in the life of al-Farabi (870-950 AD) is teaching, writing and very happy to travel. He visited Aleppo City (Halb) several times, then Egypt, Damascus, Muscat and Baghdad then headed for Haran and back again (Sudarsono, 2004, p. 15).

Al-Farabi (870-950 AD), grew and developed culturally, language and religion. He pursued Islamic sciences such as jurisprudence, hadith and interpretation. He studied Arabic, Turkish, Persian, Turkestan and Kurdistan. It is even suspected that he also knows another language. Ibn Khallikan (1211-1282 AD), believes that al-Farabi (870-950 AD) understood seventy languages including his myths. Then studied rational sciences such as mathematics and philosophy. Al-Farabi (870-950 AD), also studied logic, for that purpose he deliberately went to Baghdad to study with Abu Basyar Matta bin Yunus (870-940 AD).

Al-Farabi (870-950 AD), was a figure who liked to research and observe and even loved to isolate himself. His youth began with philosophizing, his productive period was spent gaining knowledge, and at the end of his life he became a Sufi. The academic intensity of al-Farabi (870-950 AD) flourished, he wrote many books while in Baghdad. Most of the information states that the majority of his works are lost and cannot be identified.

Although al-Farabi (870-950 AD) is a prominent figure among Muslim philosophers, information about him is very limited. He did not record the twists and turns of his life as well as his students (Rayyan, n.d., p. 367). According to some studies, al-Farabi (870-950 AD) at the age of forty left his country for Baghdad, which was the center of government and science in his time to study, among others, with Abu Bisyr bin Mattius, a Christian. He studied logic and philosophy and learned Arabic rules from Abu Bakr as-Saraj. While in Baghdad, al-Farabi (870-950 AD) focused his attention on the science of logic (Sudarsono, 2004, p. 30). At the beginning of coming to Baghdad, the mastery of Arabic was still very minimal, because he himself said that he learned nahwu from Abu Bakr as-Saraj, because of the reward of the logical lesson given to him by al-Farabi (870-950 M).

Arab writers suspect that al-Farabi (870-950 AD), is the greatest scientist after Aristotle (384-322 BC) who was given the title al-Mu'allim al-Awwal or the first teacher while al-Farabi (870-950 AD) as al-Mu'allim al-Tsani or the second teacher. The awarding of this title is inseparable from his popularity as a Muslim philosopher with the Book of *Ihsha' al-'Ulum*, which compiled the popular sciences of his time as well as Aristotle (384-322 BC) who was popular with scientific works of his time. Although al-Farabi (870-950 AD) was popular as a commentator or commentator on the philosophical works of Aristotle (384-322 BC), al-Farabi (870-950 AD) did not stop as a lecturer, instead he authored various philosophical treatises which explained his unique philosophy as he explained in the Book of *Fushush al-Hikam*, *Ihsha' al-'Ulum*, *al-Jam'u Baina Ra'yi al-Hakimain Aflatun wa Aristhu*, *Ara'u Ahli al-Madinah al-Fadhilah*, dan *Tahshi al-Sa'adah* (Amin, 1949).

In 870-950 M al-Farabi moved to Harran, which was one of the centers of Greek culture in Asia Minor to study Mantik from Yuhanna bin Jilan. It was at this time that al-Farabi (870-950 AD) received the title: Al-Muallim al-Tsani (Second Teacher), because of his mastery of knowledge so that the famous Mantik Scientist Yahya bin 'Adiy (893-974 AD) studied with him (Zayid, 1962, p. 16).

The awarding of the honorary title al-Muallim al-Tsani (Second Teacher), to al-Farabi (870-950 AD), in the intellectual world is based on his services as a good interpreter of Aristotle's logic. Thus, al-Farabi (870-950 AD) is considered as an educated and sharp man from Aristotle's kementator. Al-Farabi's essay (870-950 AD) contains no less than 128 books, the most in the field of Greek philosophy. In his work: *Ihsan ul-Ulum* (Encyclopedia of Science) he gives an overview of

all science. This book is known in the West as *De Kientfis* from the Latin translation by Gerard Cremona (Sudarsono, 2004, p. 31).

Towards his fifties, namely the age of maturity, al-Farabi (870-950 AD) returned to Baghdad to study philosophy after he mastered logic (logic). In Baghdad al-Farabi (870-950 AD) lived for thirty years which is seen as the beginning of the second stage of his life which had a lot of influence on those who communicated with him. In Baghdad all the time is used to compose, discuss, give lessons and review philosophy books. While in Baghdad, al-Farabi (870-950 AD) also met scientists and continued to gain the Science of Mantics from his teacher.

For the third time, al-Farabi (870-950 AD) returned to Baghdad as mentioned by Ibn Khallikan (1211-1282 AD), he read philosophical sciences. It was at this time that al-Farabi (870-950 AD), came into direct contact with the works of Aristotle (384-322 BC), after reading them many times so that he was able to fully understand Aristotle's thought (384-322 BC). It is even told that the *Kitab al-Nafs* by Aristotle (384-322 BC), he read a hundred times and the *Kitab al-Simau' al-Thabi'iy* he read forty times and still continues to read and repeat it. Still according to Ibn Khallikan (1211-1282 AD), that al-Farabi (870-950 AD) composed most of his works in Baghdad because he spent nearly twenty years in this city at an academically mature age (Sudarsono, 2004, p. 17).

Al-Farabi (870-950 AD), really understood the philosophy of Aristotle who was nicknamed: Al-Muallim al-Awwal (First Teacher), so it is not surprising that Ibn Sina, who bears the title of al-Syeikh al-Rais, I have studied Aristotle's book *Metaphysics* four times, but I still don't understand what it means. However, after reading the writings of al-Farabi (870-950 AD), then Ibn Sina got the key to understanding Aristotle's *Metaphysics* from al-Farabi's book (870-950 AD), entitled: *Fi Aghradhi Ma'ba'd al-Thabi'at* (Digest of *Metaphysics*) (Hyman & Walsh, 1969, p. 67).

Al-Farabi (870-950 AD) during his life made many works, in terms of science, his works can be divided into six parts, namely: 1. Logic; 2. Mathematical Sciences; 3. Natural Sciences; 4. Theology; 5. Political Science and State; 6. Potpourri (Munawwa'ah Pole). His most famous works are: *Ara' Ahl Madinah al-Fadhilah* which discusses the achievement of happiness through political life and the relationship between the best regime according to Plato's understanding (427-347 BC) and Islamic Divine law. Al-Farabi's (870-950 AD) political philosophy, especially his notion of the main city rulers, reflects the rationalization of the teachings of Imam within Shi'ism (Rozi, 2018).

Among his other works are: *Al-Jam'u Baina Ra'yay al-Hakimain Aflathun wa Aristhu*. A work that combines the thoughts of Plato and Aristotle. Next *Tahqiq Ghardh Aristhu fi Kitab Ma Ba'da Ath-Thabi'ah*. Explaining the purpose and intent of Aristotle's *Metaphysics* which in the end made a major contribution to scientists like Ibn Sina in studying Philosophy. The other works are: *Syarh Risalah Zainun al-Kabir al-Greece*, *At-Ta'liq*, *Risalah fima Yajib Ma'rifat Qabla Ta'allumi al-Falsafah*, *Kitab Tahsil as-Sa'adah*, *Risalah fi Itsbat al-Mufaraqah*, *Uyun al-Masa'il*, *Ara'yu Ahl Madinah al-Fadhilah*, *Maqalat fi Ma'ani al-Aql*, *Fushul al-Hukm*, *Risalah al-Aql*, *As-Siyasah al-Madaniyah*, *Al-Masa'il al-Falsafiyah wa al-Ajwibah Anha*, *Risale al-Aql* and others (Al-Iraq, 1978, p. 68).

In 330 H (941 AD), al-Farabi (870-950 AD) moved to Damascus (Damascus), here he got a good position from Saifudaulah. The Caliph of the Hamdan Dynasty in Halab (Aleppo), so he was invited to participate in a battle to seize the city of Damascus. Then he settled in this city until his death in 337 AH (950 AD). Al-Farabi (870-950 AD) (Labib, 2005, p. 92). But there is mention of al-Farabi (870-950 AD), died at the age of 80 years in Aleppo in 950 AD (Iqbal & Nasution, 2010, p. 5).

The Book of *Ihsha' al-Ulum*

Al-Farabi (870-950 AD) commented a lot on the classification of science in his monumental work, namely the book *Ihsha' al-Ulum*. 'Uthman Amin (1905-1978 AD), Professor of the History of Philosophy at the Faculty of Letters, University of Fuad I (now Cairo University, Egypt), has attempted to compare various manuscripts of *Ihsha' al-Ulum*, starting from the Cairo manuscript, l'Escurial Istanbul and Najf and the manuscripts in the Book of Ibn Thumlus (1164-1223 AD): *Al-Madkhal li Shina'ah al-Manthiq* and the Istanbul Kobrolo manuscript, however, 'Uthman, was very regretful because this last manuscript was not found in its entirety, only a few copies - an. Thus,

'Uthman tried to compare the Cairo script with the Arabic script and compare it with the Dikrimona translation written in Latin which was seen as the most perfect translation. 'Uthman, finally using Arabic script as a hold after being tasked with error and change (Amin, 1949, p. 30).

The Book of *Ihsha' al-'Ulum*, contains three groups of discussion, the first is a discussion on the introduction of the Book of *Ihsha' al-'Ulum* which starts on page 4 to page 43 contains the object of study, the influence of *Ihsha' al-'Ulum* in the Islamic world and the Western world and some debate whether *Ihsha' al-'Ulum*, purely the work of al-Farabii (870-950 AD)? Second, the discussion of the classification of science in the view of al-Farabi (870-950 AD), in this case 'Uthman, does not add to and does not reduce the content of al-Farabi's classification of science (870-950 AD) which is attached from page 45 to page 108. This means that *Ihshu' al-'Ulum* only contains 71 pages along with footnotes on each page. Third, it contains the comments of Western and Islamic scientists around the classification of knowledge in the view of the Farabies (870-950 M) and classification in the Arab and Western world.

Kitab *Ihsha' al-'Ulum*, written by al-Farabi (870-950 AD) in the tenth century AD or the middle of the fourth century Hijriyah. This book received appreciation and positive responses from scientists in the Islamic world and the Western world. They praise and estimate that the Book of *Ihsha' al-'Ulum* is very important for those who are interested in studying science.

In the eleventh century AD, Sha'id Ibn Ahmad al-Andalusi (W. 463 H/1070 AD) spoke about al-Farabii (870-950 AD) and his works and expressed his admiration for the book as follows:

After this al-Farabi (870-950 AD) has a very good book on the classification, definition and purpose of science, there has not been anyone who has views like this which is very useful for the student of knowledge to study Arab writers like al-Qibthi and Ibn Abi Usaiba'ah also gave appreciation and appreciation for this book (Amin, 1949).

At the end of the twelfth and early thirteenth centuries, Ibn Thumlus (1164-1223 AD), tried to quote an article on the classification of science, namely the article on Mantics. Ibn Thumlus (1164-1223 AD), put forward his views as follows: "I have never seen a good and systematic description in describing science, I took it without adding or subtracting it."

Even the Kitab *Ihsha' al-'Ulum*, was very influential among Western scientists in the Middle Ages as evidenced by the emergence of the translation of the Kitab *Ihsha' al-'Ulum*, more than once into Latin during the twelfth century AD. Two important translations are translations attributed to Dominicus Gundissalinus (1115-1190 AD), published by Rudolph Jacob Camerarius (1665-1721 AD) with the title: *Alpharabi Philosophi Opusculum de Scientis*, in Paris in 1838. However, this translation is considered imperfect because Dominicus (1115-1190 AD), discarded a chapter from the Book of *Ihsha' al-'Ulum*, namely the chapter 'Ilmu Kalam'. Some of the themes also underwent changes, some were discarded and some were summarized. While the second translation is a translation attributed to Gerard de Cremona (1114-1187 AD), removed a chapter from the Book of *Ihsha' al-'Ulum*, namely the chapter 'Ilmu Kalam'. Some of the themes also underwent changes, some were discarded and some were summarized. Meanwhile, the second translation is the translation attributed to Gerard de Cremona (1114-1187 AD), which is a very perfect translation according to the original manuscript of the *Ihsha' al-'Ulum* written in Arabic.

The book *Ihsha' al-'Ulum*, was also very popular among Jewish scholastics with the discovery of a summary translation in Hebrew written by Kalonymos ben Kalonymos (1286-1328 AD). In a long period of time, scientists still suspect that the Book of *Ihsha' al-'Ulum*, is an encyclopedia. This conjecture first appeared from Michail Casiri (1710-1791 AD), and was followed by Western and Eastern scientists such as Moritz Steinschneider (1816-1907 AD), Butrus al-Bustani (1819-1883 AD), Jurji Zaydan (1861-1914 AD), Ahmad Zaki Basya (1867-1934 AD), Farid Wajdi, and Iskandar Ma'luf. However, other scientists dispute this view.

Al-Farabi (870-950 AD) actually did not mean the *Ihsha' al-'Ulum*, as an encyclopedia in an accurate sense, but what he meant was the *Ihsha' al-'Ulum*, a summary of the sciences that developed in his time. and be a concise guide to everyone who wants to deepen knowledge. To

present to the readers a clear and thorough thought about the objects and benefits of science theoretically and practically and to try to present science activists who need and participate in seeing the most important sciences of their time. Al-Farabi (870-950 AD) clearly stated in the preface to his book entitled *Maqalah fi Ihshai al-'Ulum'* as follows:

This is the work of Abu Nasr Muhammad bin Muhammad al-Farabi (870-950 AD) about ranking, levels of knowledge (*Maratib al-'Ulum*) said: what we mean by this book is *nushhiya* (classifying knowledge according to type, compiling it down to the smallest part, sorting, classifying, covering, and calculating) the number of sciences that were popular in their time one by one, introducing and defining the content of each science globally, dividing each scientific content into smaller parts, and assembling each scientific content with its parts and then we made five chapters.

In the next paragraph al-Farabi (870-950 AD) reveals the benefits of his book as follows:

Thus this book will be useful for people who want to study and research a science ontologically and epistemologically and to what extent knowledge is useful, what are its uses and what are the advantages obtained (axiologically), so that the foundation of the science proposed has an epistemological and argumentative basis, not based on blindness and futility. In this way, through this book people will be able to compare (comparison) between various sciences, in this way it will be known which is more important, the most useful and the most certain and convincing, the strongest and the strongest and people will know which is the weakest. This book is also useful in disclosing and opening people's suspicions about a science, and will not be burdened when conveying it so that it is clear what is suspected of being a lie and what is fake is revealed. With this book it will also be clear to whom knowledge is good and whether the whole or a part or a small part of knowledge is good, and how good it is. And it will be useful for lovers of knowledge who intend to master the scope (scope) of each science, and whoever imitates (plagiarizes) surely they will be part of the imitated. Therefore, the book of *Ihsha'* is not an encyclopedia as we understand it today. However, actually the book of *Ihsha'* is intended as a book that contains and collects various sciences that developed in its era. Nevertheless, al-Farabi (870-950 AD) is still seen as the first founder of the classification of science which has a major influence and will encourage Arabic encyclopedia writers to make similar writings (Abidin, 2021).

'Uthman, there is indeed a difference of opinion whether the *Kitab Ihsha' al-'Ulum*, is only a collection of the diversity of knowledge that developed in its time along with an explanation of the problems and their global scope, or what he hopes is division, or making separate essays in an orderly manner. that generates a particular stream? As Ibn Sina (980-1037 AD) with the book of Ibn Sina's *Treatise*, with the *Book of Aqsami al-'Ulum al-Aqliyah*, Ibn Hazm (994-1064 AD) with the *Book of Maratib al-'Ulum wa Kayfiyatu ath-Thalabiha*, and as found in the writings of modern Western thinkers such as Francis Bacon (1521-1626 AD), Auguste Comte (1798-1857), and Herbert Spencer (1820-1903 AD) (Amin, 1949, p. 27).

However, what is clear according to him is the *Book of Ihsha' al-'Ulum*, not the hierarchical order and arrangement of knowledge and not creating a new school but clearly describing the classification of knowledge of the *Book of Ihsha' al-'Ulum*. Thus according to 'Uthman, it is not a barrier to keep observing this book which actually exists in a coherently arranged, systematic and logical form. Because indeed al-Farabi (870-950 AD) did not describe and explain the above issues in his *Book of Ihsha' al-'Ulum*. The hierarchy of knowledge that was made by al-Farabi (870-950 AD) in his book *Ihsha' al-'Ulum*, appeared in the form of a practical application of his general theory in the division of knowledge (Abidin, 2021).

Al-Farabi (870-950 AD), divided knowledge into five chapters, namely: The First Article, *Language Studies (Fi Ilmi al-Lisan)*, includes seven parts: 1. simple pronunciation (*al-Alfadz al-Mufradah*); 2. arranged pronunciation (*al-Alfadz al-Murakkabah*); 3. rules governing simple pronunciation (*Qawanin al-Alfadz al-Mufradah*); 4. rules governing arranged pronunciation; 5. correct writing; 6. correct reading methods (*Qira'ah*); and 7. principles of poetry (*Syi'r*).

The science of al-Alfadz Mufradah, specifically focuses on studies on the types, types, preservation, and disclosure of word by word. Included in this study are borrowed pronunciations (al-Dakhil), and foreign pronunciations (Lafaz al-Gharib) that are popular among the people. While the Science of al-Alfadz al-Murakkabah examines the statements made by prominent orators, poets and writers among them, both long and short expressions and either recited or not recited.

While 'Ilm Qawanini al-Alfadz al-Mufradah first discusses the number of letters based on the dictionary, how to pronounce one by one, means of pronunciation, speakers, structured and unstructured sentences, consonant letters, Tatsniyah, Plural, Muzdakkar, Muannas and Isytiqaq (fractions/morphology), included in the study of letters that are Tadh'if, Tasydid or Idhgham.

As for 'Ilm Qawanini al-Alfadz murakkabah, it is divided into two parts. The first examines the endings and beginnings of nouns and sentences when they are structured and composed (I'rab, Tanwin, Mutasharrif, and Mabniy). Second, explaining how the words are arranged and structured, how many parts are there to make a sentence and which is the most correct arrangement.

Furthermore, the science of reading rules (Qawanini al-Qira'ah), introduces the use of dots, and stop signs in a sentence. While the last one is 'Ilm al-Asy'ar as part of Oral Science divided into three parts, the first, calculates the wazan/scales used in poetry, both simple wazan and composed wazan, then calculates the composition of the letters based on the dictionary which produces part by part and wazan after wazan which in 'Ilm Arudh is known as al-Asbab and al-Autad. Then discuss the number of stanzas, consisting of how many letters in a perfect manner so that stanza by stanza and wazan after wazan, thus distinguishing between perfect and imperfect wazan and the most beautiful wazan to be heard and which wazan is not beautiful. The second part is examining the end of the verses with the wazan, which one is one wazan or more, which one is perfect, which one is additional and which one is lacking, which one letter, more than one letter, and which letter is the same when spoken. The third part discusses the good pronunciation used in poetry and the bad ones which are considered not poetry.

Second Article, The Science of Logic (Fi 'Ilm al-Manthiq). Al-Farabi (870-950 AD), started this chapter with a description of the benefits of logic. According to him, the Science of Mantics will provide a way of thinking and straightening someone in a good way to get the truth and not be wrong in reasoning. These methods will protect a person from errors in reasoning and thinking and these methods will also test reasoning until someone gets certain knowledge, which is the truth and which is not the truth. Through the Science of Mantics one will also acquire analogical (Qiyasy) and argumentative (Istdhlaly) ways of thinking and analyzing. Without such a person will not arrive at a definite truth (al-Haqq al-Yaqin) because it requires a method of thinking (Qawaninu al-Manthiq).

According to him, the Science of Mantics is in accordance with the Science of Nahwu (grammar). The relationship between Logic and reasoning is like the relationship between Nahwu and language. The science of Nahwu provides a method of language while the Science of Mantics provides a method of thinking and reasoning. Even in accordance with 'Ilm' Arudh which is very related to wazan poetry.

The most important section of Mantik consists of eight parts, namely, a. the rules regarding a simple categorical statement which in Arabic is called al-Ma'qulat while in Greek it is called categorical, b. the rules of a syllogism or a simple statement, namely the categorization which is composed of two single categories which in Arabic is known as al-Ibarah while in Greek it is known as Hermenic c. The statements that provide the norm of analogy belonging to the five sciences are called qiyas in Arabic and are known in Greek as the Ith analogy. d. The methods that test argumentative statements, the methods that are appropriate to philosophical problems. Arabic refers to Burhan and Greek refers to the second analogy. e. Statements that will test polemical and debating statements, methods of asking and answering and methods that are in accordance with debating skills so that they are more perfect, stable and influential are known as al-Mawadhi' al-Jadaliyah in Greek are called topics. f. The principles of something that are deviated from the truth, mixed or confused. This is done by collecting all the questions used by people who intend to distort

and falsify statements, then collect all the erroneous statements used by falsifiers, how to cancel and refute with what is rejected, how to protect and protect oneself from mistakes and being blamed by people. This book calls it *al-Hikmah al-Mumawwihah* (pseudo and false wisdom), in Greece known as *sophistica*. g. The methods that examine rhetorical statements, rhetorical parts, statements conveyed by orators and *balaghah* experts will determine whether part of rhetoric or not. In it will be collected all the problems that are in accordance with rhetorical skills, and will be introduced to make rhetorical statements. This book is called *al-Khitabah* and in Greece it is known as *Rhetoric*.

The third chapter, Numerical Sciences (*fi'Ilmi al-ta'alim*), consists of seven major sections covering: Arithmetic (*'Ilm al-'adad*) both theoretical and practical. Theoretical and practical geometry (*'Ilm al-Handasah*). It is practical, it discusses the numbers used by people in the market and is useful for determining the number of objects such as counting people, animals and money. This practical nature also examines vertical and horizontal lines when measuring walls, land, rice fields and also depicts equilateral, square, circular, triangular objects. As for theoretical arithmetic, it examines numbers absolutely as an abstraction that exists in the mind of the objects that are counted. This science also examines the net value of an object, both sensory and non-sensory, odd and even numbers, equations, excess, subtraction, and addition. This science also discusses the measurement of length, area and depth of objects and their multiplication results, vertical and horizontal lines, point and angle measurements, pairs, plans and designs. The science of optics (*'Ilm al-Manazir*, *'Ilm al-Bashariyah*), this science is almost the same as the science of *handasah*, it's just that *handasah* is more general. Astronomy (*'Ilm an-Nujum*), is divided into two, the first is the science of astrological laws examines the planets, how many there are, the second *'Ilm an-Nujum at-Ta'limiy* which is used to examine objects in the sky and in earth. This knowledge is divided into three, a. the science that explores the shape, location and level of it in the universe, b. the movement of celestial bodies, how many, planets and non-planets, displacement, direction of movement and the Milky Way, c. This science examines the inhabited and uninhabited planet Earth, climate, population, residential areas, rotation of day and night, the condition of the earth at sunrise and sunset, as well as the length and shortness of the day and night.

The Science of Music (*'Ilm Musiqa*), includes defining the parts of the tones, what composition the tones have, how to arrange the tones, in what situations the tones appear so that they are beautiful. This knowledge is divided into two, the first is practical music, which is finding the parts of the tone through existing musical instruments, both natural ones such as the throat, uvula and nose as well as artificial ones such as flutes and stringed instruments. Meanwhile, theoretical music explains about the causes of the tones that are born from tools and materials, what hearing and musical instruments are appropriate, and what objects are most appropriate.

The Science of Weight (*'Ilm al-Astqal*) talks about the origin of scales and measures, then examines the weight of something when it is moved and moved, discusses the means of lifting something heavy and moving it from one place to another, and Applied Mechanics (*'Ilm al-Hiyal/al-Mikanikiya al-Tathbiqi*).

Fourth Article, Physics or natural sciences (*al-'Ilm ath-Thabi'i*) and *'Ilm al-Ilahy*. Physics, examines physical objects both natural such as the sky, earth and what is in between, plants and animals as well as man-made such as glass, swords, beds and clothes according to human wishes. This science includes eight parts, the first, studying simple physical objects consisting of principles and the properties they have is called *as-Simau ath-Thabi'i* (objects), the second, researching the existence of these objects. simple, what things, how many there are, whether they can be observed in nature, what are its first parts, are there three or five, can all the parts of nature be observed in the sky, is it one substance, examines the elements of composed things, whether he describes his being as a simple form, whether he is something other than himself if not, whether the whole or part if part consists of what elements he is, whether he can be witnessed or not, whether the elements of simple things are the original elements for composed things. This knowledge is discussed in the Book of *As-Sama' wa al-'Alam* (sky and nature). Third, examining the state and destruction of physical objects, how the destruction and existence of its elements, how it came about from these elements that objects are composed, this is discussed in *Kitab al-Kaun wa al-Fasad*

(existence and destruction). Fourth, the science that discusses the principles of nature and reacts with its elements without being structured. This section is discussed in the Kitab al-Atsar al-'Alawiyah (fossils). Fifth, peeling about objects composed of elements, which are the same elemental parts, and which are different elemental parts, whether the composed parts consist of different elemental parts such as flesh and bone, which are not the original elemental parts of physical objects whose elemental parts are different such as salt, gold and silver. This is discussed in the Kitab al-Atsar al-'Alawiyah. Sixth, discussing the book Ma'adin (minerals) discussing mineral objects, their properties, types and parts. Seventh, is the Book of an-Nabat (Plants) which discusses the diversity of plants. Eighth, is Kitab al-Hayawan (Animals) discussing the types of animals. gold and silver. This is discussed in the Kitab al-Atsar al-'Alawiyah. Sixth, discussing the book Ma'adin (minerals) discussing mineral objects, their properties, types and parts. Seventh, is the Book of an-Nabat (Plants) which discusses the diversity of plants. Eighth, is Kitab al-Hayawan (Animals) discussing the types of animals. gold and silver. This is discussed in the Kitab al-Atsar al-'Alawiyah. Sixth, discussing the book Ma'adin (minerals) discussing mineral objects, their properties, types and parts. Seventh, is the Book of an-Nabat (Plants) which discusses the diversity of plants. Eighth, is Kitab al-Hayawan (Animals) discussing the types of animals.

Whereas 'Ilm al-Ilahi or Metaphysics examines all that is metaphysical divided into three parts, first, discussing essential forms and characteristics, second, discussing the principles of argumentation in particular theoretical sciences, third, discussing forms absolute non-physical.

Fifth Article, Political and moral science ('Ilm al-madani), This science is divided into two, the first includes the definition of happiness, the second includes leadership and power, conditions for urban prosperity, human virtue, ethics and political theory. Jurisprudence ('Ilm al-Fiqh), discusses: faith, rites. Jurisprudence is divided into two parts, the first is about opinions (ara'), the second is about rituals and religious practices (af'al). Theology ('Ilm al-Kalam) is a science that helps to be able to defend opinions from attacks by others (Al-Ghazali & Al-Syirazi, 1997, pp. 147-148).

The sciences of aqliyah do not provide limitations, on the other hand, the sciences of nakliyah are only specific to Muslims even though knowledge in general remains shared property. These are the details and distribution of knowledge described by al-Farabi (870-950 AD) in the Book of Ihsha' al-'Ulum which he completed writing at the end of the month of Ramadan in 640 H.

CONCLUSION

It should be noted that editorially the book Ihsha' al-'Ulum by Al-Farabi (870-950 AD) does not state any distinction, let alone an editorial which dichotomizes the sciences presented. Al-Farabi (870-950 AD) only did division or division of knowledge both ontology, epistemology and axiology. Al-Farabi (870-950 AD) mentions various terms that are almost the same but semantically contain a hierarchical meaning. The term is taqsim/aqşam or division, shinfun/ashnaf or part and juz'un/ajzaun or the smallest part. This illustrates that what al-Farabi (870-950 AD) did was collect and calculate (Ihsha') the diversity (ta'did) of knowledge in his time and then detail (tafsil) these sciences down to the smallest part so that the levels are known. (marathib) science. Al-Farabi (870-950 AD) divided knowledge into two sections, namely: Theoretical Sciences (al-'Ulum al-Nadzoriyah), and Practical Sciences (al-'Ulum al-'Amaliyah wa al-Falsafatu al-madaniyah). This division can be seen from the division of knowledge into five articles which describe these sciences into theoretical and practical terms.

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