This study aims to show the process by which the teaching of sciences that were originally translated from pre-Islamic scientific legacies, particularly from Greek, were integrated into the formal teaching programs of the medreses – the most indigenous institutions of learning in Islam. This article being part of a wider study on the development of these institutions shows the transformation from the personal teacher-disciple relationship to the institutional model in Turkish medreses of the pre-Ottoman and Ottoman era until the sixteenth century. The process of the institutionalisation of science during this period is one of the most interesting and intricate subjects in the history of sciences in Islamic civilisation.  

Islam and the Islamic culture penetrated Anatolia or Asia Minor-the greater part of Turkey- in the first century of the Hegira. This epoch coincided with the reign of the second Caliph Umar and with the conquests that put an end to the Byzantine rule in Syria. After the conquest of the southern Anatolian regions in 640, the old settlements of Amid (Diyarbakir), Mardin, Ruha (Edessa-Urfa), Harran, Hisnkeyfa, and Meyyafarakin were won over to the new religion and culture. Some of these cities were instrumental in the transmission of the Hellenistic cultural and scientific heritage to Islam. The fortified cities of Adana, Tarsus and Antakya (al-Avâsim) and the vanguard cities of Malatya, Marash and Erzurum (al-Shugur) successively came under the rule of the first Caliphs, the Umayyads and the Abbasids.  

The first Turkish conquests in Anatolia began during the reign of the Great Seljuk Sultan Tugrul Beg (1042-1045). The Malazgirt victory of Sultan Alp Arslan against the Byzantine Empire in 1071 opened the gates of Anatolia to the Turks. Within two centuries Anatolia acquired its Turkish and Islamic identity. These territories, which had belonged to the old Roman Empire, had been called the Roman lands (Bilâd al-Rum) since the first conquests by the Arabs and continued to be called so during Ottoman times.  

Towards the beginning of the twelfth century, the Seljuk Turks became the leading political and military power, and their language became the lingua franca in the area. Europeans referred to these lands as Turkey. In 1242-3, the Mongols destroyed the politically and militarily weakened Seljuk power. The Mongols made the Seljuks their vassals and the Seljuk state broke into several smaller Turkish principalities.  

It was during this period, towards the end of the 13th century, in 1299, that the Ottomans first emerged as a small principality under the Seljuk Sultanate in Konya. They rapidly became a dominant state, advanced and spread into the Byzantine lands of Anatolia and the Balkans, and conquered Istanbul in 1453. Half a century later, Sultan Selim I (1512-1520) brought all the Anatolian principalities under one rule and united the area.

1. SOCIAL AND CULTURAL LIFE IN ANATOLIA DURING PRE-OTTOMAN TIMES

Before we turn to the study of the scientific and cultural activities in Anatolia during the Seljuk period, we should investigate social and cultural life during the 11th-14th centuries. Under the Seljuks, the Anatolian people were divided into two basic religious groups, namely the Muslims and the Christians, and into three social classes, that is, the nomads, the peasants, and the city dwellers. The Seljuk city dwellers were the military and the civil servants, the learned men, sheikhs, Seyyids, dervishes, preachers, poets, physicians, craftsmen, and merchants. The sultans, beggs, and distinguished people supported cultural activities by founding mosques, medreses, public kitchens, dervish lodges and hospitals, many of which were endowed as pious foundations or waqfs.

Cultural development in Turkish Anatolia blossomed in the second half of the 12th century, and important cultural and artistic works were produced during the 13th century. The Mongol invasion must have had an unsettling influence on Anatolian urban life, and yet despite the unsettling consequences this political turbulence must have had, great progress is observed in every field in the 13th century in Seljuk cities.

Simon of Saint Quentin reports that there were 100 cities in the Seljuk State towards the middle of the 13th century. Ibn Sa'id al-Maghribi states that there were 24 provincial cities in the Seljuk State, each administered by an official governor, with one judge (qadi), mosque, baths, and cloth merchants. The Seljuk administrators were lenient towards non-Muslim communities and gave them the opportunity to live and practice their own religions freely in their cities. Contemporary Western and Islamic sources acknowledge the fact that urban life in the main Anatolian cities of the 13th century was more developed than life in the cities under Byzantine administration. The Seljuks “built up the whole infrastructure of Sunni Islam” in Anatolia. They appointed the Iranians, whose culture was more developed at the time, to the various bureaucratic posts in their administration and invited their scholars to come and settle in Anatolia. Thus, in many of the cities where the Seljuks had settled, Iranian culture became dominant. Arabic and Persian were used as the official languages of the Seljuks. As Cahen remarks, during the Seljuk era in Anatolia, the most favourable integration, from the viewpoint of political administration and cultural progress, was not between the local people and the Turks but rather between the Iranians and the Turks. The main cause behind the ensuing conflicts in Seljuk Turkey was the deterioration of the relations between the Turkmens who lived in rural areas and the city dwellers who had been deeply influenced by Iranian culture. The Turkish beggs were also influenced by the Byzantine and Ilkhanid