Stars more massive than ~ 1.3 $M_\odot$ are known to develop a convective core during the main-sequence: the dynamo process due to this convection could be the origin of a strong magnetic field, trapped inside the core of the star for the rest of its evolution. If such field exists, it should affect the mixed modes inside red giants as they are sensitive to processes affecting the most intern layers of the stars. The impact of a magnetic field on dipolar oscillation mode of the Sun was studied in the context of the SOHO/MDI mission. The investigation of the solar acoustic oscillation modes did not provide any hint of the existence of a magnetic field in the solar core. We generalise this work to evolved solar-like stars: today we have access to the core of evolved stars thanks to the observation of mixed modes from the Kepler, K2 and TESS missions. We investigate the theoretical effect an axisymmetric magnetic field with poloidal and toroidal components on the mixed modes frequencies of simulated sub-giants and red giants. This theoretical perturbative study enable us to estimate the magnetic perturbation on the frequencies of mixed dipolar modes, depending on the magnetic field strength and the evolutionary stage of the star.