Let V be a 10-dimensional real vector space and U_1 and U_2 two linear subspaces such that $U_1 \subseteq U_2$, $\dim_{\mathbb{R}} U_1 = 3$, and $\dim_{\mathbb{R}} U_2 = 6$. Let $\mathcal{E}$ be the set of all linear maps $T : V \to V$ which have U_1 and U_2 as invariant subspaces (i.e., $T(U_1) \subseteq U_1$ and $T(U_2) \subseteq U_2$). Calculate the dimension of $\mathcal{E}$ as a real vector space.