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Safeer Hussain Khan* (safeer@qu.edu.qa), Department of Mathematics, Statistics and, Physics, Qatar University, Doha, 2713, Qatar, and Fukhar ud-din Hafiz. Common fixed points of three contractive-like operators by a three-step iterative algorithm.

Imoru and Olatinwo extended the concept of quasi-contractive type operators given by Berinde to contractive-like operators. Contractive-like operators are more general than quasi-contractive type operators and Zamfirescu operators (including contractions). This kind of operators are helpful in proving results in normed spaces in contrast with (uniformly convex) Banach spaces. Xu and Noor introduced a three-step-one-mapping iterative algorithm which can be seen as a generalization of Mann and Ishikawa iterative algorithms. Such algorithms have been applied in finding the approximate solution of elastoviscoplasticity problems, eigen value problems and liquid crystal theory. In this paper, keeping in mind the importance of common fixed points, we first extend the iterative algorithm of Xu and Noor to the case of three-step-three-mappings and then prove a strong convergence result using contractive-like operators for this iterative algorithm. This generalizes corresponding results using Mann, Ishikawa and Xu-Noor iterative algorithms with quasi-contractive type operators. It is pointed out that our result can also be proved with iterative algorithm involving error terms. (Received September 05, 2014)