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#### ACCEPTED MANUSCRIPT

## An extended teaching-learning based optimization algorithm for solving no-wait flow shop scheduling problem

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#### Graphical abstract

**Functions** Description Steps Initialize based on problems Preview knowledge based on Previewing of class existing books or experience Initialize based on optimization algorithm The teacher teaches all learners to move them to Teaching phase Global search promising area. The teacher should have the global information Each learner communicate Balance local search and with other leaners to obtain the Learning phase neighborhood and the global search with exchanging direction and the historical information information Some learners review Local search based on Reviewing of class knowledge and Expend problems knowledge

#### Highlights

- A novel framework of meta-heuristic algorithm according to the teaching-learning process is proposed.
- The Gaussian distribution is employed as teacher to guide learning to search more promising areas.
- The best learner is integrated to mutation vectors and the crossover operation is used to save the historical knowledge.

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