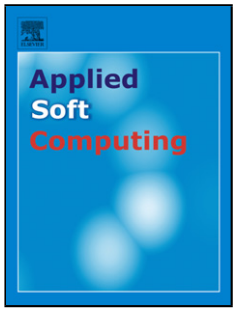

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An improved teaching-learning-based optimization algorithm and its application to a combinatorial optimization problem in foundry industry

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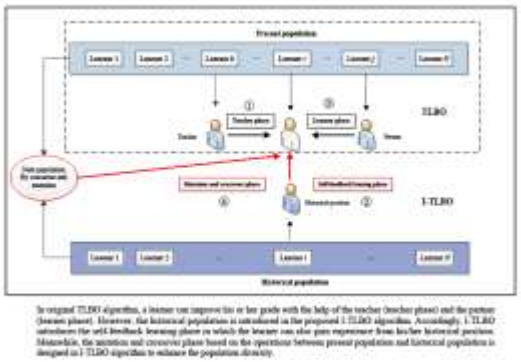
Graphical abstract



Highlights

- We propose a novel improved teaching-learning-based optimization algorithm with the concept of historical population.
- Two new operators are designed in the proposed algorithm to achieve the balance of exploration and exploitation ability.
- 24 benchmark functions are tested with other algorithms to verify the good exploration and exploitation ability of proposed algorithm.
- The proposed algorithm is applied to address a combinatorial optimization problem in foundry industry with the design of coding and decoding mechanism.