

Revisions Made to Manuscript

The authors would like to thank the reviewers for their helpful comments and suggestions. Please find details of the corrections made below.

The reviewers have raised the concern that the comparison between the results obtained by the authors and that obtained by Beligiannis et al. [1] is not accurate as the results listed in the submitted manuscript are not the same for the evolutionary algorithm employed by Beligiannis et al.[1] as that cited in other literature. As pointed out by one of the reviewers all the studies using the Beligiannis data sets use 3 constraints and evaluate and compare for these three constraints, namely, teachers gaps (i.e. they should be as few as possible), class dispersion (i.e. no lesson should be taught twice or more on the same day), teacher dispersion (i.e. the workload of each teacher should be balanced during all days of the week). However, the manuscript submitted uses the same data sets but uses the four soft constraints listed on pg. 1267 of Beligiannis et al.[1]. In addition to the three constraints listed above the "uniform distribution of idle/gap periods for teachers" is also used. Thus a comparison with the results in the papers referred to by the reviewer could not be made. The comparison presented in the manuscript under review was possible by communicating with Beligiannis et al. and obtaining the best timetables produced and assessing these for all four constraints. The authors agree that this was not a good idea as the objective function used by Beligiannis et al. would have not optimized the timetables for the fourth constraint. A second reviewer has indicated that such a comparison cannot be performed as two different problems have been solved and that the comparison be omitted. This has been done and a comment has been added to the paper explaining why a comparison is not possible (pg. 16, Table 8 and the paragraph above this; pg 11, last paragraph of section 4.2).

The GA reported in the manuscript is not that implemented by Beligiannis et al. but by the authors themselves (this has been referenced in the manuscript) and is also not the GA in "Solving effectively the school timetabling problem using particle swarm optimization". The GA was implemented and run by the authors and tested on all four constraints, hence the difference in the results reported in the manuscript under review and that reported in the above paper. A comment to this effect has been added to the paper (pg. 15, last bullet).

The second concern raised by the reviewers is that the submitted manuscript uses 6 instances instead of 7 instances. Although 7 instances are mentioned in the first paper using this data set, subsequent papers do not use instance 6 ([2] (pg. 6038), [3] (pg. 3483), [4] (pp. 556)). Please refer to Zhang et al., pg. 556, section 4.2, line 3 for an explanation of why this instance is omitted. A comment explaining this has been added to the manuscript together with reference to these papers (pg. 11, section 4.2, last sentence of the paragraph before Table 2).

References

1. Beligiannis GN, Moschopoulos CN, Kaperonis GP & Likothanassis SD, 2008, Applying Evolutionary Computation to the School Timetabling Problem: The Greek Case, *Computers and Operations Research*, Vol. 35, 1265-1280.
2. Tassopoulous IX & Beligiannis GN, 2012, Solving Effectively the School Timetabling Problem Using Particle Swarm Optimization, *Expert Systems with Applications*, 39, 6029-6040.
3. Tassopoulous IX & Beligiannis GN, 2012, A Hybrid Particle Swarm Optimization Based Algorithm for High School Timetabling Problems, *Applied Soft Computing*, 12, 3472-3489.
4. Zhang D, Liu Y, Hallah RM & Leung SCH, 2010, A Simulated Annealing with a New Neighbourhood Structure Based Algorithm for High School Timetabling Problems, *European Journal of Operational Research*, 203, 550-558.