



A Short Discussion on Some Relevant Scheduling Topics

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Some recent hot topics of scheduling problems with great practical value in manufacturing systems and service fields involve designing effective heuristic methods and algorithms to find the best solution for production plans or policies with or without certain constraints. These topics include time-dependent processing times relevant scheduling, and customer order scheduling, etc. According to the literature reviews, it is noted that a lot of studies have been conducted on scheduling theory and its applications to solve different scheduling problems in real-life phenomena for a long time. We can find that researchers pay more attentions on proposing optimal solution searching methods, developing near-optimal heuristics, and discussing computational complexity or on analyzing the behaviors of heuristics (algorithms) according to experimental computational outputs. In classical scheduling model, job processing times are considered as fixed and known integers. However, the learning effect can contribute the job processing times can be further shortened. This stream can be named as scheduling with learning effects. On the other hand, the aging/deteriorating effect can contribute the job processing times can be further increasing a bit longer. This stream is called as scheduling with aging/deteriorating effects; New models for scheduling with time-dependent processing times also is presented in book; New methods for dealing with scheduling with time-dependent processing times are shown in two special issues. The customer order and two-stage assembly scheduling problems are another two important and hot issues. The literature related to the customer order and two-stage assembly scheduling time-dependent processing times (learning/deteriorating effect) are few. A customer order and two-stage assembly shop with scenario-dependent processing times are also

another interesting topics. It is a worth future direction studying to creating or developing novel and new results on these issues including proposing fundamental methodological breakthroughs, new theory development, innovative modelling, and analysis, etc.

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