Heuristic Analysis

Option 0:
This is basically the same as ID_Improved, with score calculated as *#my_moves - #opponent_moves*, this is added for my own comparison purposes.

Option 1:
This is a more aggressive version of Option 0, with score calculated as *#my_moves – 2 * #opponent_moves*. The reasoning behind it as that this heuristic can impose more penalty on the potential moves if this move does not have a large advantage over the opponent in terms of moves.

Option 2:
This heuristic considers the difference between the centre and the player's current location with Euclidean distance function. A common way of thinking is that the shorter to the centre the better, because in centre it is easier to partition as well as gaining more moves.

Option 3:
This heuristic combines option 0 and 2 by adding the results of them, this might yield better result because it tries to compensate more for the loss of advantages of move choices in option 1 while gaining the advantage of closing to centre on the other hand.

RESULTS:
<There maybe randomness involved, so I ran the tournament three times for each of the evaluation functions 1 – 3 and took the average>

Vs (Win vs Loss)	ID_Improved	Student		
		Option 1	Option 2	Option 3
Random	17 vs 2.33	15.67 vs 4.32	16.33 vs 3.67	17.67 vs 2.33
MM_Null	15.33 vs 4.67	14.33 vs 5.67	15.67 vs 4.33	15 vs 5
MM_Open	12.67 vs 7.33	13 vs 7	12 vs 8	14.33 vs 5.67
MM_Improved	13.33 vs 6.67	13.67 vs 6.33	12 vs 8	14 vs 6
AB_Null	13.33 vs 6.67	15.33 vs 4.67	14.33 vs 5.67	15.67 vs 4.33
AB_Open	13.67 vs 6.33	12.67 vs 7.33	12 vs 8	13.33 vs 6.67
AB_Improved	11.33 vs 8.67	12.33 vs 7.67	10.33 vs 9.67	12.33 vs 7.67
summary	69.05%	69.29%	66.19%	**72.62%**

Clearly, Option 3 is the most optimum one, although it is just overtaking the others by a few percentages, its overall performance for each of the tournaments is consistently or mostly better than the other options as well as ID_Improved.
By adding the weight of option 0, we can see a key improvement here compared to option 2, in this case, it is observable that while closest_to_centre heuristics can help, its extra computational expenses actually lower its performance, but the expenses are recovered with the addition of option 0. Since it even outperforms ID_Improved (option 0), I suggest there might be a ensemble relationship between the distance to centre and the number of moves to aid in the final result.