Results and Discussion

Outline

- Importance
- Perspective
- Moves
- Claims
- Stance
- Useful phrases
- Example
- Individual/Pair writing
- Peer review

Results: Importance

"research has shown that in some fields such as Engineering, the ability to make a point or build an argument based on data is essential to successful writing (Wolfe, 2011)"

(Swales and Feak, 2012)

Results: Importance

> "sharing results is the most effective way to evaluate your own research"

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https://www.iip.kth.se/nyheter/citation-is-a-sign-of-quality-1.1060190
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Results

Facts

Locate

Summarise

Highlight

Explain

Interpret

Discussion

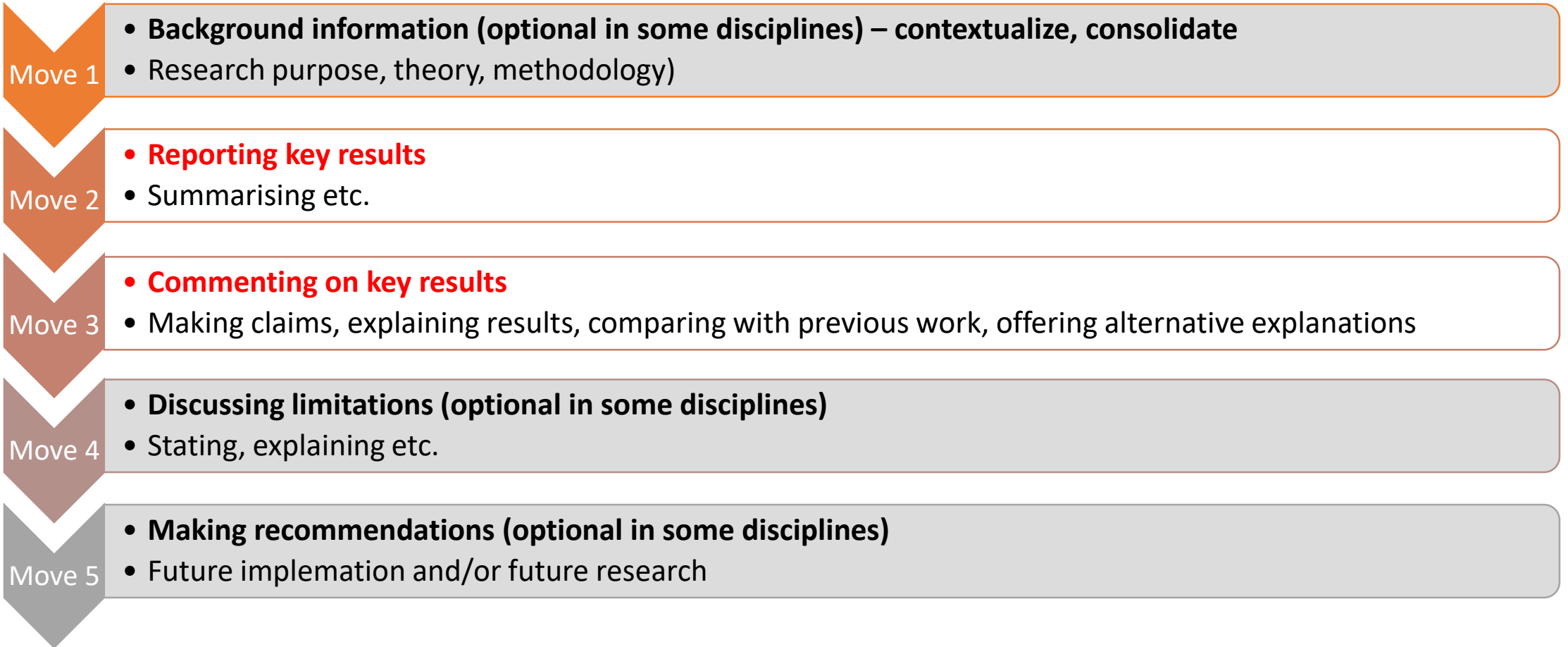### Claims

Comment

Discuss wider meaning

Results

- Importance of figures and tables
- Data is not results
- Communicate the data in a meaningful way
- Locate/Summarise data
  - The changes in temperature are shown/can be seen in **Table 2**.
  - **Figure 3** illustrates the different surface features.
  - The process requires four steps (**Figure 4**).
- Highlight data
  - The changes in temperature are shown/can be seen in **Table 2**. There are noticable fluctuations in temperature.
- Explain/Interpret your data
  - The changes in temperature are shown/can be seen in **Table 2**. There are noticable fluctuations in temperature, which are associated with …
  - **Figure 3** illustrates the different surface features. Each line represents …

Discussion:
step back and get perspective on findings and on the whole study

Structure and 'moves' in Discussions (Swales and Feak, 2012, p 368 – slightly adapted)

Move 1
- **Background information (optional in some disciplines) – contextualize, consolidate**
- Research purpose, theory, methodology)

Move 2
- **Reporting key results**
- Summarising etc.

Move 3
- **Commenting on key results**
- Making claims, explaining results, comparing with previous work, offering alternative explanations

Move 4
- **Discussing limitations (optional in some disciplines)**
- Stating, explaining etc.

Move 5
- **Making recommendations (optional in some disciplines)**
- Future implemation and/or future research

Presenting claims

- What is the strength of your claim?
- How can you present your claims thoughtfully and carefully?

Stance

Attitude	Technique	Language
Being cautious Softening/Cushioning Moderating/Qualifying	Hedging	*It is likely that …* *This may indicate …* *This goes some way towards supporting …*
Being confident	Boosting	*There is a clear need for …*

Are the following:
Reporting results or Discussing results

1) Table 1 shows/compares …

2) There is no evidence to suggest that …

3) The majority of those surveyed felt that …

4) As shown in figure 1, …

5) As can be seen from the table, …

6) Overall, the results …

7) The results show/indicate/suggest that …

8) It is unclear as to whether or not …

9) A minority of respondents revealed that …

10) Approximately two thirds of participants disagreed …

11) It is interesting to note that …

12) A correlation was found between …

13) There may be several reasons for this …

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Results (with some background and discussion)

- To investigate the effect of the different worker combinations, all possible combinations were used with MBO on the same set of benchmarks graphs (See section 3.3). Each worker combination was executed 5 times for each graph, and the mean number of colors of the queen for each flight was calculated. This is because the MBO is nondeterministic, meaning the result of each execution might be different. The mean for flight i is thus the mean of the best solutions found at the end of flight i (i > 0), with the mean for flight 0 being the mean of the initial solutions.

- **Figure 4.1–4.9 are** plots for each benchmark showing the mean of each flight for all worker combinations. The x-axis shows the flight number and the y-axis shows the mean.

- **Figure 4.10 plots** the average performance of a worker combination across all benchmarks. To normalize across the benchmarks, the mean of each flight is recalculated as a percentage of the colors used in the initial solution. For each combination and flight, the mean and standard deviation of the percentages across all benchmarks are plotted. The x-axis shows the flight number and the y-axis shows the percentage.

- **From the results, it is clear that** GrRe is **unlikely to** perform better than the greedy initial solutions. …

Discussion (wider discussion)

- **The results show that** MBO utilizes the strength of each worker available. In Figure 4.10, **it is clear that** combinations using the worst individual worker GREEDYRECOL perform similarly to their counterparts without GREEDYRECOL. **This means that** the MBO has successfully decided not to use the worst worker. Also, in Figure 4.7, combinations using TABUCOL perform better than combinations using PARTIALCOL, while in Figure 4.4 and Figure 4.5, combinations using PARTIALCOL perform better. So the combinations using both PARTIALCOL and TABUCOL utilize whichever worker that is best suited for the benchmark. **Thus, the MBO can successfully give precedence to whichever worker is best suited for any particular benchmark. This is in accordance with how the algorithm is supposed to function, utilizing the strength of each worker available.**

Conclusion

- **This thesis has described** an MBO implementation applied to GCP **and investigated** the effect of using different combinations of workers. Three different workers **were used**. One greedy algorithm of the authors' own design called GREEDYRECOL and two known tabu search heuristics, PARTIALCOL and TABUCOL. MBO **was found to** utilize the strengths of each worker available where needed. **It was found that** including GREEDYRECOL was not useful on average. Combinations using PARTIALCOL **were found to** have the best **overall** performance. For one benchmark, combinations using TABUCOL outperformed combinations using PARTIALCOL. This **might indicate** that combinations with both PARTIALCOL and TABUCOL have better performance on a wider set of benchmarks. **Further investigation should be conducted** on a larger set of benchmarks and more worker heuristics. In order to allow for more worker heuristics, a different search space than the one presented in this thesis **could be used** for the MBO implementation.

Academic phrasebank

- https://www.phrasebank.manchester.ac.uk/

References

- Swales, J., and Feak, C. (2012) Academic writing for graduate students: Essential tasks ans skills. Michegan University Press
- Wolfe, C. (2011) Argumentation across the curriculum. Written communication. 28. 193-219