Capacitação em Escrita Científica

Módulo 4

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Instituto de Física de São Carlos, USP

USP, 2013

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Workshop Outline

Modulo 1: O Gênero Literário

    Seções de Um Artigo Científico

Módulo 2: Estrutura 1: *Abstract*

Módulo 3: Estrutura 2: *Introduction*

Módulo 4: Estrutura 3: *Results and Discussion, Conclusion*

Módulo 5: Estilo

    Linguagem 1: Especificidade, Complexidade e Ambiguidade

Módulo 6: Linguagem 2: Redundâncias, Ação no Verbo, Fluidez de Texto, Ritmo de Escrita

Módulo 7: Linguagem 3: *Plain English*, Escrever em Inglês, Preposições

Módulo 8: Linguagem 4: *Topic Sentences, Cover Letters*, *Final Remarks*

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Módulo 4

Estrutura 3:

Results and Discussion, Conclusion

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Results and Discussion

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Results and Discussion

The most important section of a paper

The section where you prove your initial question, hypothesis, idea, etc.

Illustrative Materials (figures, tables, graphs, images), Outcome of Calculations, and TEXT.

Importance of figure Quality, Data Analyses and Statistics

The way you write your achievements makes the whole difference

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Nanomedicine and
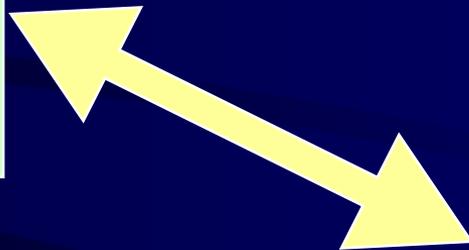Nanotoxicology Group

An Interesting Example…

M4P1 Nature

"It has not escaped our notice that the specific pairing we have postulated immediately suggests a possible copying mechanism for the genetic material"

Watson, JD, Crick, FHC*, Nature*, 171, 737, 1953.

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Introduction
(purpose)

Results and Discussion
(Key Results)

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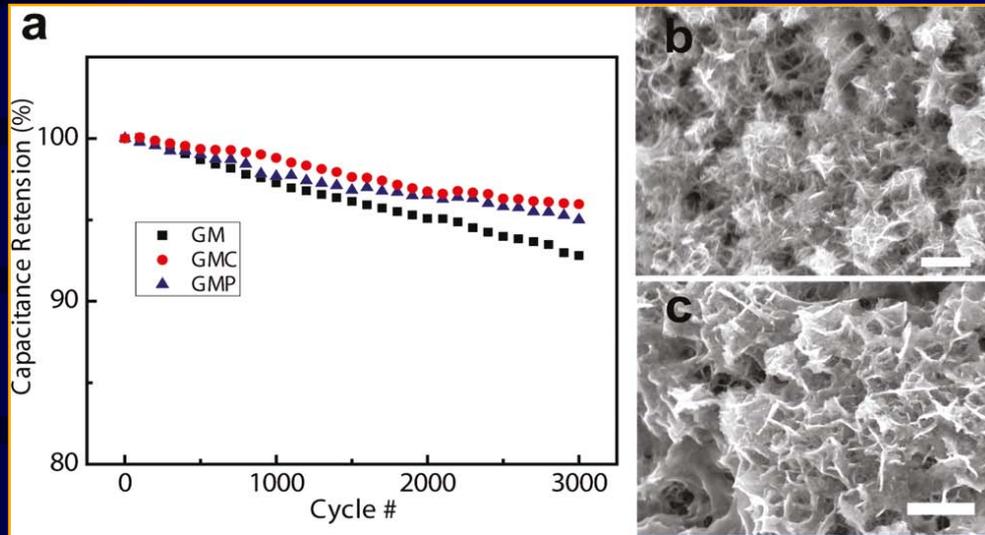
A Tentative Model:

- Background / Importance

-Describe the outcomes of your research
(figure, tables, graph, image, calculations, algorithm tests, etc)

   * In computer Science-related areas this section is usually divided in a number of specific subtopics .

- Interpretation

- Comparison

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Example 1

Figure 4. Cycling performance of hybrid nanostructured electrodes. (a) Comparison of cycling performance for three hybrid systems showing capacitance retention of ~93%, ~96%, and ~95% after 3000 cycles of charging and discharging at current density of 1 mA/cm2 for GM, GMC, and GMP, respectively. (b, c) SEM images of GMC- and GMP-based textiles after 3000 cycles showing that the MnO2 nanoflowers were still wrapped with conductive layers and the whole structural integrity of active electrode materials was well maintained. Scale bars: 1 μm.

Yu et al., Nano Lett. 2011, 11, 4438

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Example 1

M4P2 Nano Lett

- Cycling performance is another key factor in determining the supercapacitor electrodes for many practical applications. Excellent cycling stability is crucial for real supercapacitor operations. The cycling tests for all three different electrode systems were carried out using the same current density of 1 mA/cm2. Figure 4a compares the cycling stability of three systems and shows that ~93%, ~96%, and ~95% capacitance was retained over 3000 cycles of charging and discharging for GM-, GMC-, and GMP-based electrodes, respectively. All three electrode systems demonstrate much better cycling performance compared to those reported in previous work (typically 7585% retention over 1000 cycles),13,21,22 thanks to hierarchical structures of graphene/MnO2 textiles.

Yu et al., Nano Lett. 2011, 11, 4438

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Results and Discussion

Major section	Individual section
Introduction	Abstract
	Introduction
	Lit review/hypothesis
	Context
Methodology	Theory
	Method
The back end	Results
	Analysis and/or discussion
	Conclusion
Supporting evidence	Notes
	Appendix
	Acknowledgements
References	References

Accounting, Auditing & Accountability Journal, 26, 2013, 876-910

Style

- Past tense;

- Third Person, preferably;

- Use active voice whenever possible.

- Subheadings may improve organization and comprehension

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Reach a balance between description of data in the text and in the figure/table legend

Any reader must **understand** a Figure/Table without reading the results section.

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Tips

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Captions

Legends should convey as much information as possible:

The subjects of the experiment,

The relationship displayed,

Sample sizes and statistical tests if they are not displayed elsewhere.
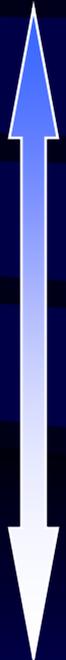
Legend

≠

axis label *vs* axis label (only)

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Conclusion

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Function: To state the importance of the paper to the development of the field.

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Conclusion

Pyramidal Structure

Specific

Key findings

Interpretation of main Results

Contribution to the field

General

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Conclusion
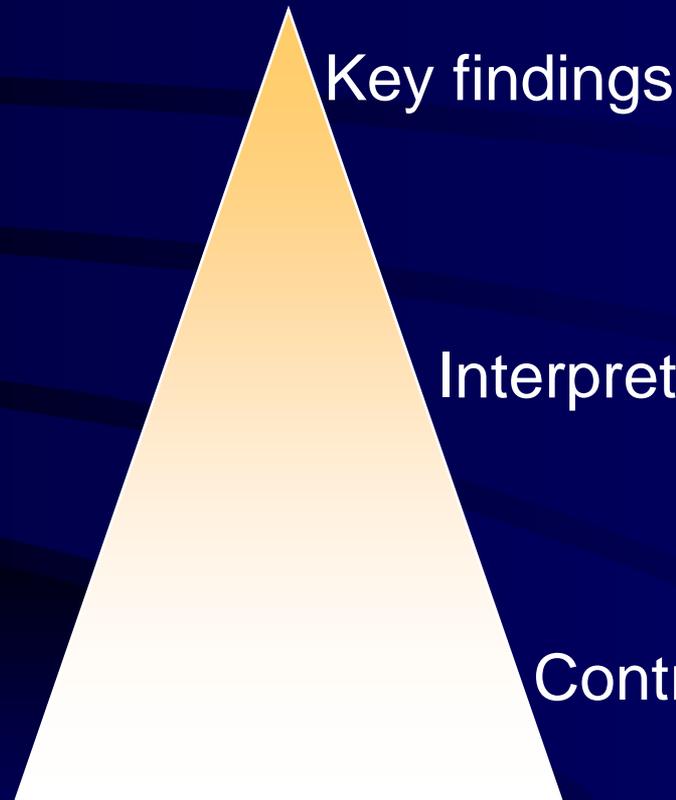
A Suggested Model

1. State main findings
Emphasize your main results.

2.Interpretation of the main findings
Take a few sentences to re-state the interpretation of the key results.

3. Contributions/Progress to the field
Describe the implications of your achievements to the field.

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Style

- Past and Present tense;

- Third Person, preferably;

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Categorize the sentences in the following conclusions sections:

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Conclusion

The importance of housing market wealth and financial wealth in affecting consumption is an empirical matter. We have examined this wealth effect with two panels of cross-sectional time-series data that are more comprehensive than any applied before and with a number of different econometric specifications. The numerical results vary somewhat with different econometric specifications, and so any numerical conclusion must be tentative. We find at best weak evidence of a stock market wealth effect. However, we do find strong evidence that variations in housing market wealth have important effects upon consumption. [….]

For example, according to the results presented in Table 2 for Model I, a ten percent increase in housing wealth increases consumption by roughly 1.1 percent for the international panel, while a ten percent increase in stock market wealth has virtually no effect upon consumption. For the panel of U.S. states in Table 2 (Model I), a ten percent increase in housing wealth and in stock market wealth have about the same effect on consumption – an increase of 0.4 percent. [.….] According to the same model, the immediate effect of a ten percent increase in housing wealth is an increase in consumption of 0.4 percent for the panel of U.S. states while a ten percent increase in financial wealth has no effect [.….]. These calculations should not imply a false precision in the interpretation of our econometric models. Nevertheless, they do support the conclusion that changes in housing prices should be considered to have a larger and more important impact than changes in stock market prices in influencing household consumption in the U.S. and in other developed countries.

CASE, QUIGLEY and ROBERT J. SHILLER, Advances in Macroeconomics, 5, 2005 1

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Conclusion

The expanding environmental policy triggers more and more interactions between managers and authorities who usually face the direct, social and market-based regulations in addition to each other. The interactions cause high and fast increasing transaction costs that cover a substantial and growing share in all environment protection expenditures. Given an environmental policy, a higher transaction cost implies less spending on environmental technologies, thereby a lower over-all environmental performance. The option to reduce the transaction costs through radical change in regulation is risky; shift from the direct to social regulation in the Netherlands entailed even faster increase of the transaction costs, whereas the environmental performance decreased. Another option is to improve the interactions management using web-based information and communication technologies. Based on conservative assumptions this could save about 4.2 billion euro a year in the EU. The web-based expert system, Environmentor, developed for the permits applications, environmental management systems and emission trading bilateral and through an auctioning platform contributes to better interactions management in environmental policy entailing lower transaction costs.

Management Research Review, Vol. 36 , 2013

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Conclusion

"[....] The findings from the interview study described in this paper show the influences and considerations during the decision-making process at the competitive bidding stage for service contracts. This forms a first step towards a more elaborate understanding of the processes involved in practice and of the development of a support for industry to make more informed decisions and secure the profitability of their service contracts. In addition to the aim of the presented interview study, namely the identification of the available information for manufacturing companies at the competitive bidding stage for service contracts, the study delivered further results. For example, it was found that costing information is typically communicated within the company either in tabular form as a cost breakdown or in a graphical form as a three-point estimate. Recent research found that these approaches are suboptimal in raising the decision maker's awareness of the uncertainty connected to the cost forecast (Kreye et al., 2012). Thus, further research is necessary to support industry in adapting optimal approaches for the communication of the uncertainty associated with the decision-making problem. The findings described in this paper can be used for future research to develop a uncertainty model for competitive bidding. This uncertainty model can include the information connected to the customer and competitors to determine the manufacturing company's probability of winning the service contracts and its probability of making a profit. This information supports the decision makers at the bidding stage to make a more informed decision, evaluate the level of risk with their pricing decision and, thus, ensure the long-term profitability and sustainability of their business".

Journal of Manufacturing Technology Management, 24,2013, 976-997

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Conclusion

This research found that the frequency of use of social media services is positively impacted by the level of perceived usefulness, enjoyment, and perceived ease of use provided by the social media services. The study found fairly equal adoption of social media services across genders with the exception of interest. Social media service designers and marketers can use the findings of this study to act as a guide in the development and promotion of functions that are attractive to current and potential users of their services.

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Conclusion

The question 'is biochar a useful soil amendment' has been partially addressed in this study. The response to the question is that it depends on the characteristics of the biochar. It is demonstrated that biochars can be vastly different in their sorption and desorption properties. In one case, a fast pyrolysis biochar, added to a degraded soil, reduced the P-fixing capacity of a degraded tropical soil. In another case, slow pyrolysis biochars had differential effects on P sorption, suggesting that they could be useful to manage soil P differently in the same soil, or be used preferentially in different soils to acquire desired P supply benefits.

Soil Use and Management, September 2013, 29, 306–314

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Conclusion

This study examines the impact of the mandatory IFRS adoption on the market stability and informational efficiency of the adopting firms. Our empirical analysis is based on a sample of 1,187 adopting firms from 20 European countries. We show that the mandatory IFRS adoption reduces both the first order autocorrelation and the conditional variance of the underlying stocks. These findings indicate that IFRS improves the quality of information production and lowers the measurement errors. Finally, we show that IFRS is more likely to cause an increase (a decrease) in the b coefficient when the firm is from a common (civil) law country. We conclude that mandatory IFRS adoption enhances the informational efficiency and contributes positively to the market stability of the adopting firms. However, in some countries, particularly the common law, investors may require a higher risk premium when holding the adopting firm's equity due the increase in the b coefficient subsequent to the mandatory IFRS adoption. Our systematic risk evidence is in line with Daske et al. (2008), who show that only firms from strong regulatory environment are likely to experience reduction in their cost of capital after switching to IFRS.

Journal of Applied Accounting Research, 14 ,2013, 4-17

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Conclusion

Example 6

M4P9 Int J Inf

In this work, we tackle the problem of predicting the next web page request of users' when navigating the web. Most previous research in the field has exclusively made use of the Hit and Miss score (HM) for evaluating prediction accuracy. We argue that the HM score has limitations in terms of evaluating the accuracy and therefore complementary scoring methods are necessary.

To alleviate this problem we have investigated three additional useful scoring metrics: the Mean Absolute Error (MAE), the Ignorance Score (IS) and the Brier Score (BS). As we have discussed the scoring metrics have different interpretations [….]

This work makes use of the VLMC model as our prediction mechanism, however, we believe the study can be generalized to other prediction mechanisms that provides a set of predictions ranked by their probabilities. One such example is the use of hybrid Markov models that assemble models of various orders.47 Such models could benefit [….]

Our experiments show that the additional scores and the concept of unexpected events provide valuable insight when setting up a model for predicting the next link choice of a user based on other users navigation preferences. The detection of unexpected events can also provide the means to assess the adequacy of recommendations that are provided based on historical data. [….] In addition, the experimental results confirm that the prediction accuracy increases with the order of the model, and also increases when unexpected events (or unpredictable), controlled by a parameter, α, are being detected rather than being predicted. The experiments also show that the accuracy of prediction varies for different data sets.

Future work involves a better understanding of what makes a prediction algorithm such as maximum likelihood perform better on different data sets. A preliminary investigation taking into account *concept drift* 45 when building the variable length Markov model over a long period was conducted and the results reported in Ref. 50. Finally, we also wish to apply the prediction algorithm to data sets from different applications areas such as patrolling the web.

Borges et al., International Journal of Information Technology & Decision Making, 9, 2010, 547.

Conclusion

Example 2

M4P4 Mechatronics

For the purpose of increasing generated power in harvesting energy, according to Eq. (14) that has been derived in this paper, the elastic base can indeed lower the resonant frequency of the miniature generator to approach ambient vibration frequency. The resonant frequency reduction percentage depends on mass and stiffness of the proposed elastic base. Based on Eq. (14) and Table 1, the resonant frequency reduction percentage can reach 70% when r = 1 and a = 10. If the miniature generator is attached to the rigid base, the maximum power is 1.08 nW. By contrast, if the miniature generator is attached to an elastic base with a point mass, the maximum value of the power 0.92 lW is obtained with the mass ratio a = 10 and stiffness ratio r = 6. The power of different cases on elastic base with point mass is shown in Table 4. In this study, the arm swing frequency is designated as 15 Hz, and the theoretical resonant frequency of the miniature generator of piezoelectric bender shown in Eq. (22) is about 81.2 Hz. According to Table 1, when the stiffness ratio r is fixed if the mass ratio a increases, the resonant frequency decreases and is close to 15 Hz, the arm swing frequency. Therefore, the bender vibration amplitude becomes larger. The more the bender deforms, the more…….

W. Li et al., Mechatronics 21 (2011) 1183

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Conclusion

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M4P5 Nature Nanotech

Example 3

In this study, we demonstrated cancer immunotherapy using DCs pulsed with multifunctional core–shell nanoparticles consisting of a superparamagnetic Fe3O4 core covered with a photonic ZnO shell. The nanoparticles provided simple and consistent outcomes for the ex vivo antigen loading of DCs, for in vivo tracking and induction of strong anti-CEA immune responses, even in an immune-tolerant host. The ability of the nanoparticles to be efficiently loaded into DCs in a short incubation period (1 h) without surface modifications or transfection agents may expedite clinical trials. It might be possible to bypass the complex chemical modifications of the Fe3O4 surface that are generally performed in an organic environment to conjugate tumour antigens, a step that has the potential to alter their antigenicity. When combined with a tumour-associated antigen, nanoparticle- loaded DCs did not show changes in viability and phenotype. Taken together, the core–shell nanoparticle could be applied in diverse DC-based immunotherapies that need to monitor antigen loading in vitro and track DCs in vivo to ensure consistent clinical efficacy.

Cho et al., Nature Nanotechnology, 6, 2011, 675

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"Conclusion and Outlook"

[..................]   *

In future work, initialization procedures based on statistically-rigorous methods such as latin hypercube design or orthogonal arrays will be implemented within the memetic algorithm introduced in this contribution. The MA will be applied to an extended model of the reactive distillation column with an optional external side reactor and also to different design optimization problems from the domain of chemical engineering to further test the potential and the limitations of the proposed solution approach. This will also provide additional insight into the performance of the different mechanisms for mutation and recombination used in the MA.

IEEE Transactions on Evolutionary Computation, 15, 2011, 659

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Journal of Applied Accounting Research

"Conclusions and areas for further research"

Urselmann, et al., IEEE Transactions on Evolutionary Computation, 15, 2011, 659

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Journal of Business Research

6. Conclusions
    6.1. Research contribution
    6.2. Managerial implications
    6.3. Further research and limitations

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Assignments

1. **Identify the five Top Journals in your research area**

2. **Select at least 10 abstracts and Introduction sections from good papers from these journals**

3. **Categorize all sentences in these abstracts based upon the proposed models**

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Sources

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Watson, JD, Crick, FHC*, Nature*, 171, 737, 1953.

Yu et al., Nano Lett. 2011, 11, 4438

Brawand et al., Nature, 2011, 478, 343

W. Li et al. / Mechatronics 21 (2011) 1183

Cho et al., Nature Nanotechnology, 6, 2011, 675

Urselmann, et al., IEEE Transactions on Evolutionary Computation, 15, 2011, 659

Borges et al., International Journal of Information Technology & Decision Making, 9, 2010, 547.

Butcher et al., Human–Computer Interaction, 26, 2011,123.

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Muito Obrigado

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