

Basics & Skills for Creating Proper Scientific Posters



By : Dr. Ahad Aljarf

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What is a Poster?

- **A poster is any piece of printed paper designed to be attached to a wall or vertical surface.**
- **Academic posters communicate summarized information or research concisely and attractively, to help publicize it and generate discussion.**
- **According to the French historian Max Gallo, "for over two hundred years, posters have been displayed in public places all over the world.**

Academic Posters

- ✓ A poster can be defined as a multimodal communicative genre, with text, graphics, colour, speech, and even gesture used to convey meaning (Kress & van Leeuwen 2001).
- ✓ They also help viewers to absorb a lot of information quickly.

Types of posters

- Political posters.
- Travel posters.
- Event posters.
- Educational posters:
 - ✓ *Research posters.*
 - ✓ *Classroom posters.*

Moment of inertia of flywheel

Theory:

When a torque (T) accelerates a flywheel of inertia (I) its acceleration (a) is related by, $T=Ia$

The analysis:

Torque = mass $\times$ gravity $\times$ radius of axel

$$T = mgr$$

$$V = \pi r^2 \times L$$

$$k = \frac{\text{radius}}{\sqrt{2}}$$

$$\text{Angular acceleration} = \frac{2}{t^2 r}$$

Acceleration due to gravity, $g = 9.81 \text{ m/s}^2$

$$L_1 = 55 \text{ mm}$$

$$L_2 = 42.5 \text{ mm}$$

$$R_1 = 19 \text{ mm}$$

$$R_2 = 82.5 \text{ mm}$$

$I_{\text{total}} = \text{Moment of material}$

$$I_{\text{total}} = mR^2$$

$$I = M_1 k_1^2 + M_2 k_2^2$$

$$\text{Mass} = \text{Volume} \times \text{Density} = \pi r^2 L \rho$$

$$\text{Density of steel, } \rho_s = 7850 \text{ kg/m}^3$$

$$\text{Density of aluminum, } \rho_a = 2720 \text{ kg/m}^3$$

$$\text{Volume}_1 = \pi \times (19 \times 10^{-3})^2 \times 55 \times 10^{-3} = 6.24 \times 10^{-6} \text{ m}^3$$

$$\text{Volume}_2 = \pi \times (82.5 \times 10^{-3})^2 \times 42.5 \times 10^{-3} = 9.09 \times 10^{-4} \text{ m}^3$$

$$\text{Mass of Steel } M_1 = V_1 \times \rho_s, M_1 = 6.24 \times 10^{-6} \times 7850 = 489.8 \times 10^{-4} \text{ kg}$$

$$\text{Mass of Steel } M_2 = V_2 \times \rho_s, M_2 = 9.09 \times 10^{-4} \times 7850 = 7.136 \text{ kg}$$

$$\text{Mass of aluminum } M_1 = V_1 \times \rho_a, M_1 = 6.24 \times 10^{-6} \times 2720 = 169.7 \times 10^{-4} \text{ kg}$$

$$\text{Mass of aluminum } M_2 = V_2 \times \rho_a = 9.09 \times 10^{-4} \times 2720 = 2.472 \text{ kg}$$

$$\text{Radius of gyration } K_1 = \frac{r_1}{\sqrt{2}} = \frac{19 \times 10^{-3}}{\sqrt{2}} = 13.4 \times 10^{-4} \text{ m}$$

$$\text{Radius of gyration } K_2 = \frac{r_2}{\sqrt{2}} = \frac{82.5 \times 10^{-3}}{\sqrt{2}} = 58.3 \times 10^{-4} \text{ m}$$

$$\text{Inertia of flywheel of steel } I = M_1 k_1^2 + M_2 k_2^2 = (489.8 \times 10^{-4}) \times (13.4 \times 10^{-4})^2 + (7.136) \times (58.3 \times 10^{-4})^2 = 24.3 \times 10^{-4} \text{ kgm}^2$$

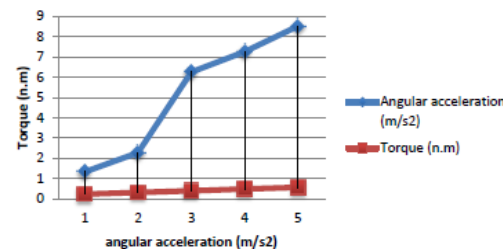
$$\text{Inertia of flywheel of aluminum } I = M_1 k_1^2 + M_2 k_2^2 = (169.7 \times 10^{-4}) \times (13.4 \times 10^{-4})^2 + (2.472) \times (58.3 \times 10^{-4})^2 = 8.43 \times 10^{-4} \text{ kgm}^2$$

Results of the experiment

Aluminum	Mass (kg)	1 st try Time (s)	2 nd try	3 rd try	Average (s)	Angular acceleration (m/s ²)	Torque (n.m)
	0.3	10.24	8.12	7.83	8.73	1.33	0.24
	0.4	4.57	8.57	6.97	6.70	2.28	0.32
	0.5	3.83	4.37	3.96	4.05	6.25	0.40
	0.6	3.20	4.16	3.93	3.76	7.25	0.49
	0.7	3.83	3.07	3.52	3.47	8.51	0.57

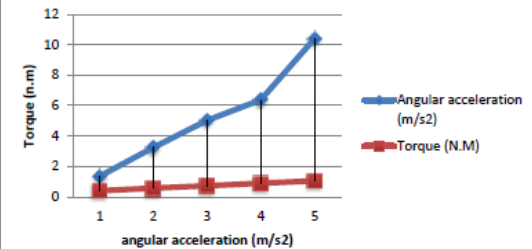
Steel	Mass (kg)	1 st try Time (s)	2 nd try	3 rd try	Average (s)	Angular acceleration (m/s ²)	Torque (N.M)
	0.5	9.38	8.79	7.91	8.69	1.35	0.40
	0.7	5.71	5.76	5.39	5.62	3.24	0.57
	0.9	4.53	4.53	4.50	4.52	5.02	0.73
	1.1	4.01	4.02	4.01	4.01	6.37	0.89
	1.3	3.64	2.34	3.46	3.14	10.40	1.05

Aluminum Chart



$$\text{Gradient (m)} = \frac{y_2 - y_1}{x_2 - x_1} = \frac{0.22 - 0.24}{2.28 - 1.33} = 64.21 \times 10^{-4}$$

Steel Chart



$$\text{Gradient (m)} = \frac{y_2 - y_1}{x_2 - x_1} = \frac{0.57 - 0.40}{3.24 - 1.35} = 89.94 \times 10^{-4}$$

Discussion:

If the velocity increases, the torque must reduce in (inverse) proportion so when the velocity doubles the torque halves if we assumed that there was no losses.

There are some errors in this experiment such as human error. Error in using the timer. That has effect the graph, as it shown the increase of angular acceleration was not increasing regularly.

Conclusion:

A flywheel is a mechanical rotating device, which is used to store rotational energy. The gradient (inertia) can easily be found through the graph by using the equation of line $y = mx + c$.

How to Prepare a Proper Scientific Poster

- **Your poster must include:**

- ✓ **Main title.**
- ✓ **Introduction/Background/purpose** (states research problem and should quickly address the subject matter).
- ✓ **Aims and objectives.**
- ✓ **Materials and methods** (description of the approach). **Results/ finding** (summary of findings).
- ✓ **Summary/ conclusion/ discussion.**

How to Prepare a Proper Scientific Poster

- **You can also include:**
 - ✓ **References.**
 - ✓ **Acknowledgement (optional).**
 - ✓ **Useful links/ For further information (optional).**

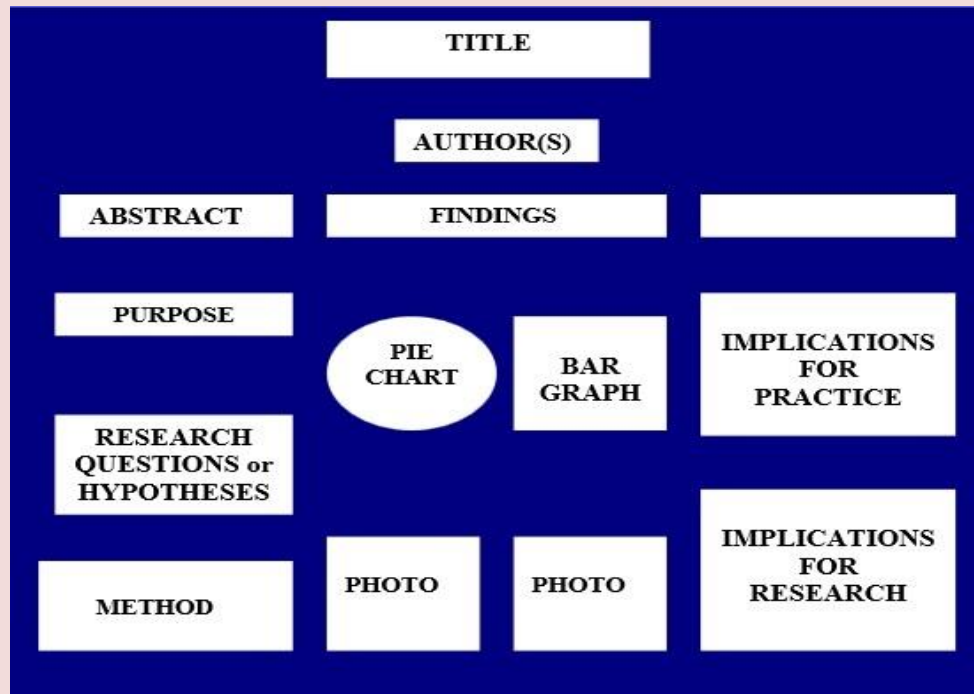
Sizes

- **Typical academic poster sizes:**

A0: 118.9 cm x 84.1 cm, A1: 84.1 cm x 59.4 cm

A2: 59.4 cm x 42.0 cm, A3: 42.0 cm x 29.7 cm

- **Posters layout!!**



Ideal Word Counts

The ideal length for the text of a poster is approximately 800 words.

- **Introduction:** 125 words.
- **Materials and methods:** not exceed 150 words.
- **Results:** 250 words.
- **Conclusion:** 150 words.

(Dale J. Benos, 2012)

Font Sizes

- **Main title**, use 72 -120 point font. The title should be readable at a distance of 15 feet.
- **Authors and affiliations**: use 40 - 80 point, bolded font, same style and case as used for the main title.
- **Headings**: use 36-42 point bolded font, same style and case as used for the title and subtitles.
- **Text**: Use 24-36 point font.

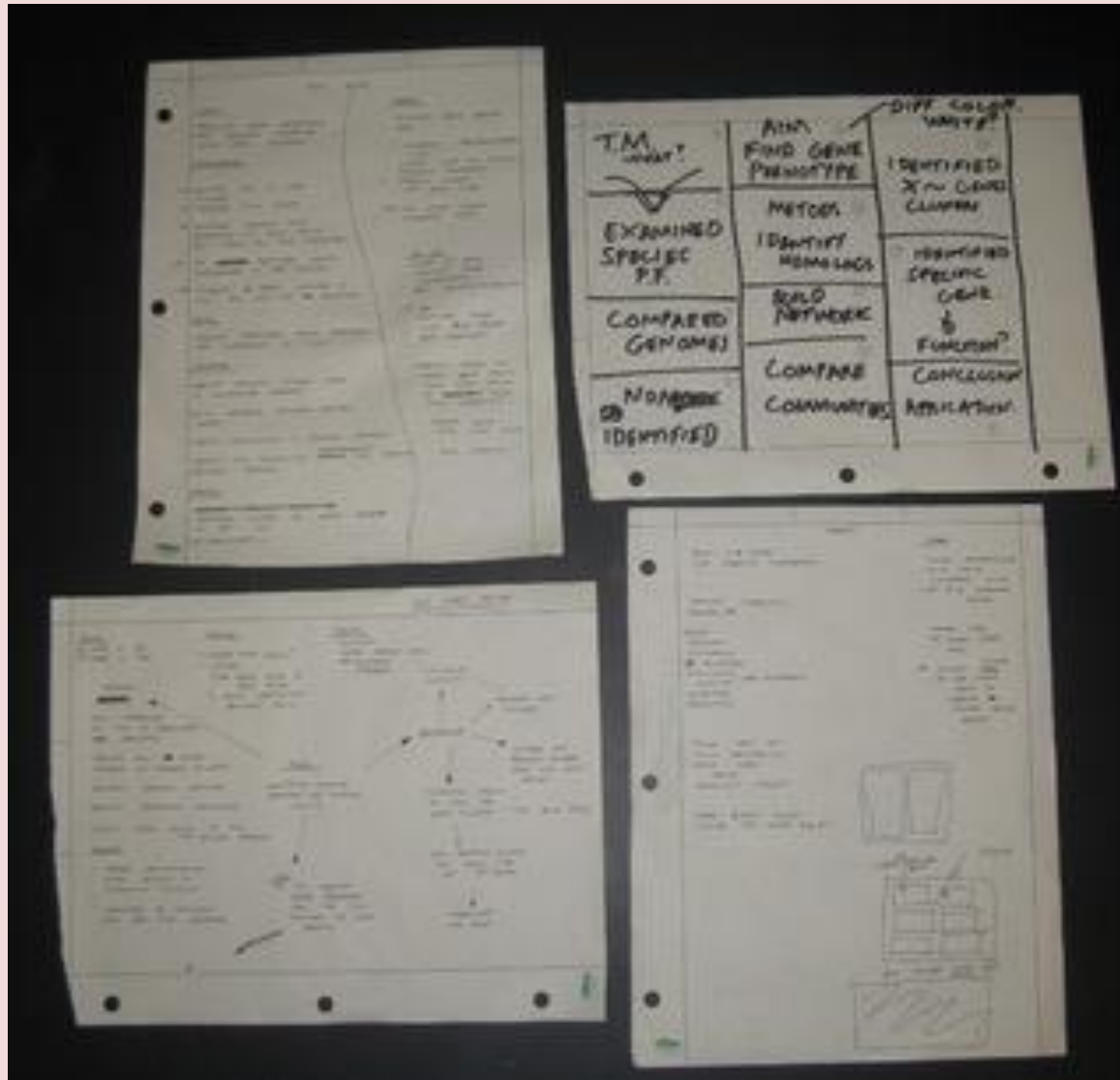
(Dale J. Benos,2012).

Tips and Hints

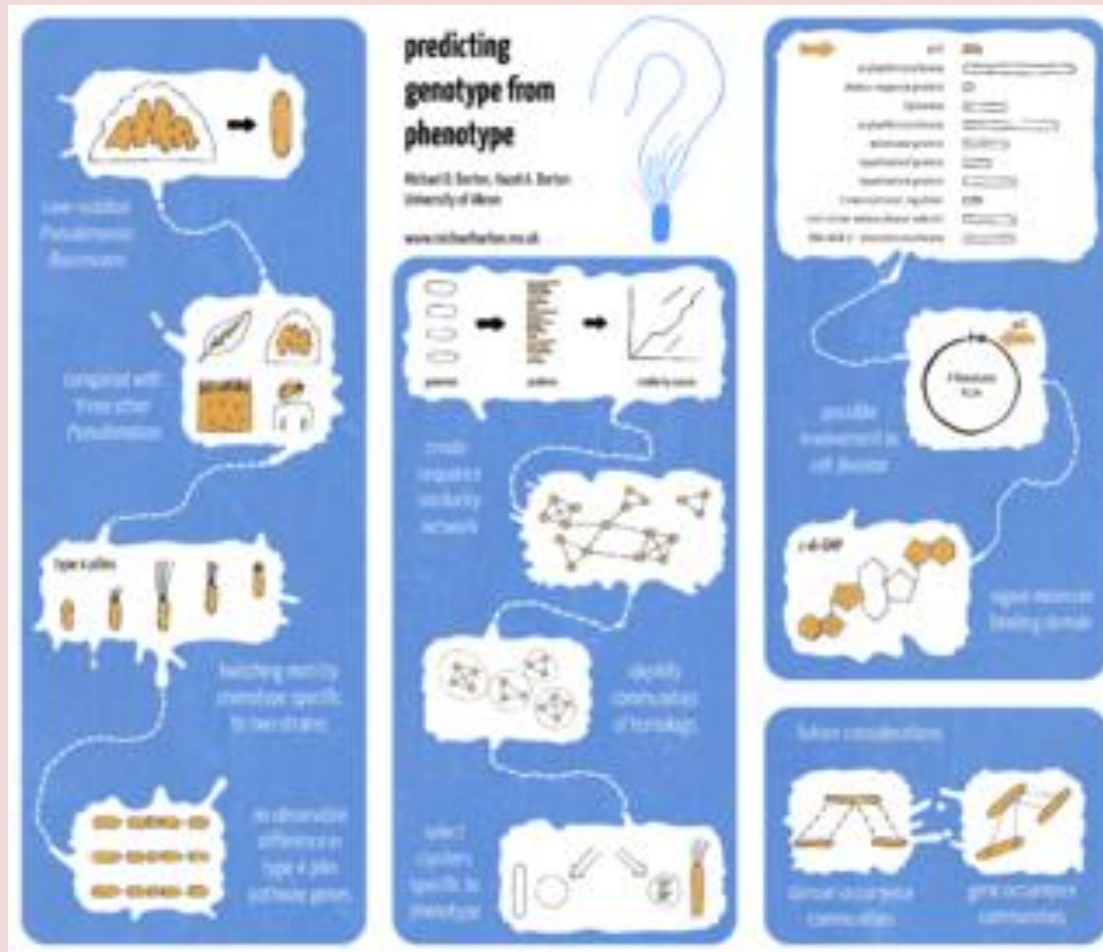


- **Before designing remember, your poster must be:**
 - ✓ *Simple.*
 - ✓ *Clear.*
 - ✓ *People can read it quickly.*
 - ✓ *People can read it easily.*
 - ✓ *Define Your Audience.*
- **How to summarise your work?!**
- **How to guide your readers?!**

Think and Draw!!



Result?



Tips and Hints



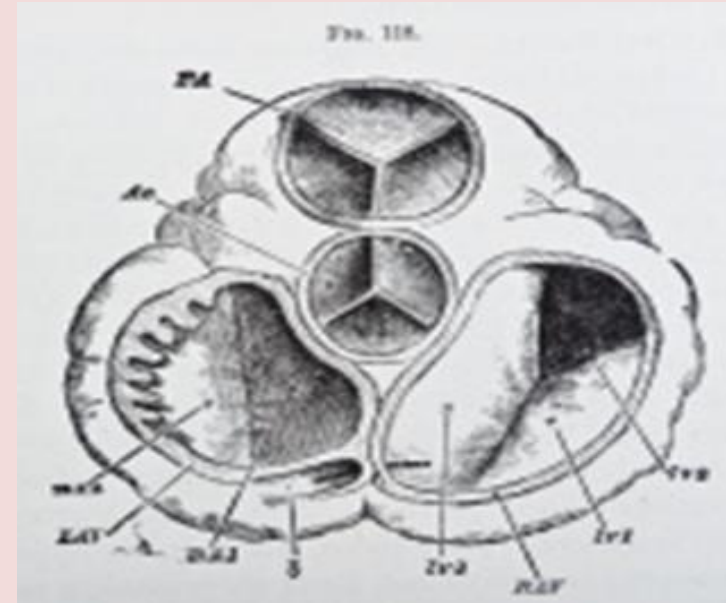
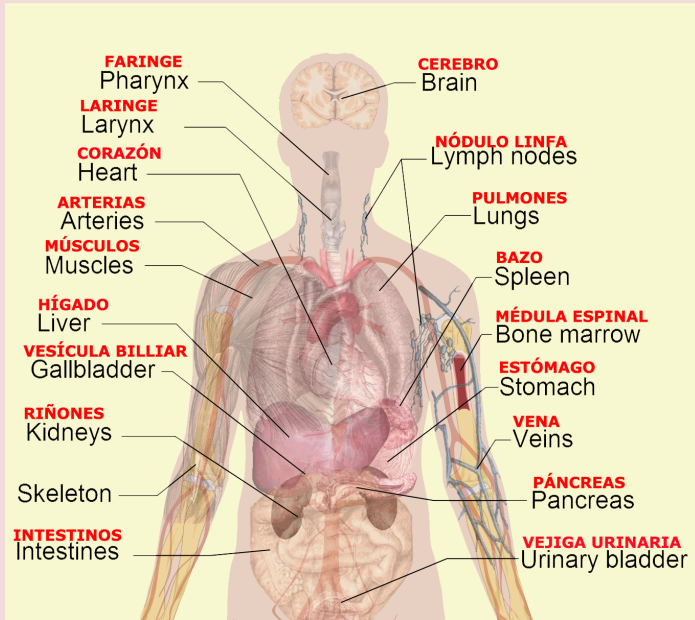
- **While designing remember:**
 - ✓ **Focusing on images, graphs..etc.. Why?**
 - ✓ **Attention, how can I buy the audience attention?**
 - ✓ **What are the information that I want to deliver?**
 - ✓ **Attraction, how can I attract others?**
 - ✓ **Think of: the main title and the sub titles.**
 - ✓ *Do not typeset the title in all capital letters—such text is difficult to read.*

Tips and Hints



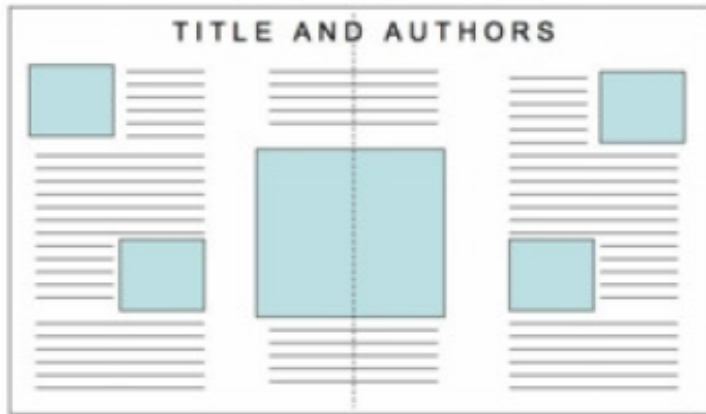
- ✓ **Balance the placement of text and graphics.**
- ✓ **Blank space is good as it makes the poster seem less complicated and more approachable.**
- ✓ **Select dark color (black/blue) for main text, select red for important text.**
- ✓ **Design individual sections so that they can be quickly read (use numbers or bullets).**

Images

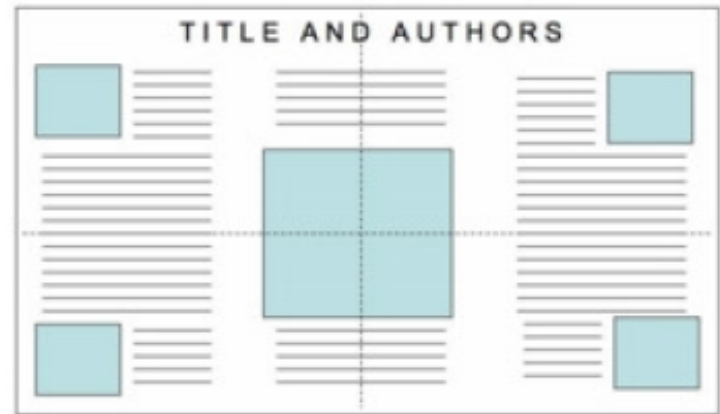


- Try to keep your graphs/ images and figures above **13cm x 15 cm**. This is a good size relative to the size of an A0 sheet.
- **The most suitable image format for poster creation is a high resolution JPEG (.jpg) file.**
- Avoid low resolution images from web pages.

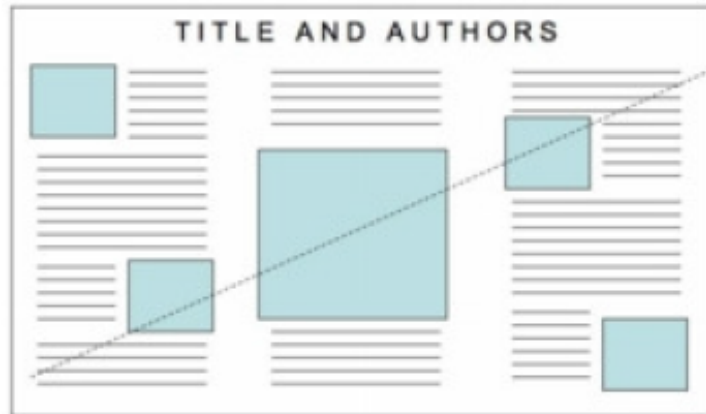
Example



Horizontal Symmetry



Horizontal & Vertical Symmetry



Diagonal Symmetry



Asymmetry
(text-heavy on left, image-heavy on right)

Example

Balanced

Logo
To the point
Logo

Title

Set of personalized, unique, and reliable services for all customers, ensuring maximum satisfaction, from the moment you call us to the moment we deliver the service. We are committed to providing the best quality service, ensuring your satisfaction.

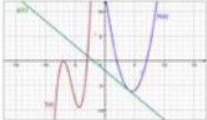

Title

Set of personalized, unique, and reliable services for all customers, ensuring maximum satisfaction, from the moment you call us to the moment we deliver the service. We are committed to providing the best quality service, ensuring your satisfaction.




Title

Set of personalized, unique, and reliable services for all customers, ensuring maximum satisfaction, from the moment you call us to the moment we deliver the service. We are committed to providing the best quality service, ensuring your satisfaction.



Unbalanced

Logo
To the point
Logo

Title

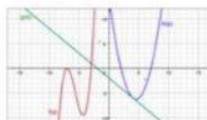
Set of personalized, unique, and reliable services for all customers, ensuring maximum satisfaction, from the moment you call us to the moment we deliver the service. We are committed to providing the best quality service, ensuring your satisfaction.





Title

Set of personalized, unique, and reliable services for all customers, ensuring maximum satisfaction, from the moment you call us to the moment we deliver the service. We are committed to providing the best quality service, ensuring your satisfaction.



Tips and Hints



- **Before presenting your poster remember:**
 - ✓ **Make sure you know the time, date, and location of the session.**
 - ✓ **Allow plenty of time to prepare.**
 - ✓ **Think bout what you will say, anticipate likely questions and practice your responses.**
 - ✓ **Have colleagues comment on drafts.**

Tips and Hints



- **Before presenting your poster remember:**
- **Relaxation Techniques**

Breathing – Positive Thinking – Bottle of water

- **Check mistakes.**

Remembre!

- Although academic posters also have a spoken component (presenters are required to verbally describe the poster, summarize it, point out the most salient elements and interact with viewers).
- **If your poster is to be distributed online, convert it to PDF.**

Tips and Hints



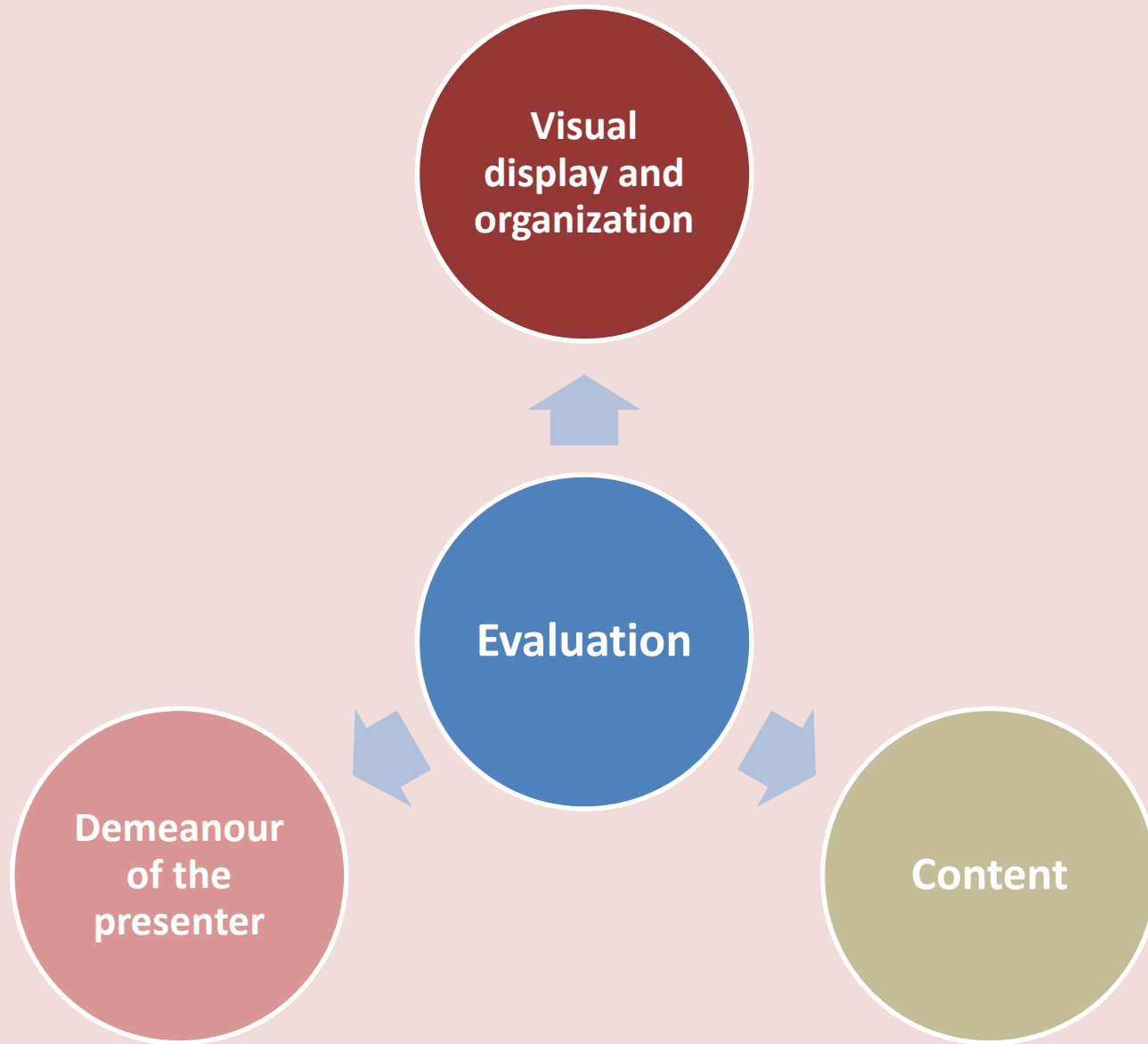
- **While presenting your poster remember:**
 - ✓ **You.**
 - ✓ **Your voice >>> 35%.**
 - ✓ **Your words >>> 7%.**
 - ✓ **Your body language >>> 55%.**
 - ✓ **Don't stand in the front of your poster!**
 - ✓ **Answer questions.**

Tips and Hints

- **While presenting your poster remember:**
- **How can you deal with questions?**
- **How can you pay the audience attention while you are standing next to your poster?**

English Vs. Arabic Posters?

- 1. What are the differences between them?**
- 2. What are the similarities between them?**
- 3. Have you prepared poster with the two languages before?**



Examples & Templates

- **The most popular software you can use for creating posters are:**
 - ✓ **PowerPoint.**
 - ✓ **CorelDraw.**
 - ✓ **Publisher.**
 - ✓ **InDesign .**
 - ✓ **LaTeX (Mathematical research).**
- **Posters templates online.**

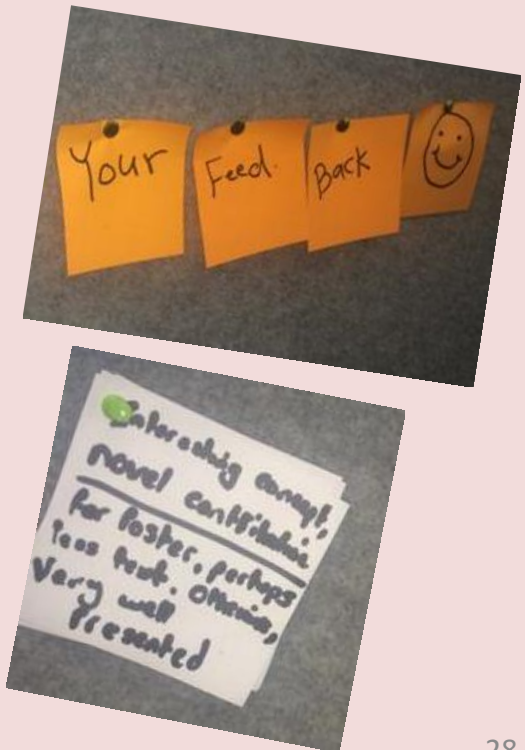
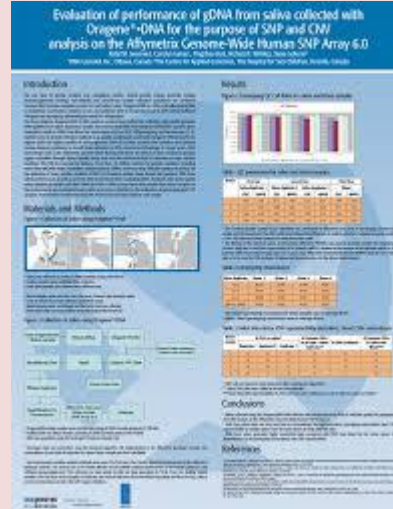


Ideas for Presenting!

Electronic
copy
(QR Code)

A4
Copies of
your
poster

Audience
Feedback



www.qr-code-generator.com

ReadingLists... Digimap eBridge Hullfire Hull Service Desk Library Catalog PebblePad Portal University E-mail Library - Live Chat

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Website (URL)

http://www.example.de

☒ Static ☐ Dynamic ([What does dynamic mean?](#))

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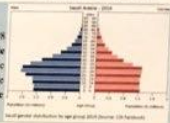
Exploring the Ecosystem of Empowerment of Women in Entrepreneurship in the Kingdom of Saudi Arabia (KSA) during the Twenty-First Century

Al Haddad, Raihan

MA Candidate at University of Westminster, London, UK | r1517434@wp.westminster.ac.uk | <https://uk.linkedin.com/in/raihan-al-haddad-601579101/> | s13282

Introduction

The twenty-first century has seen an unprecedented rise in global entrepreneurship, with 126 million women starting their own businesses and 98 million running businesses in 2012 (Kelley et al., 2012). Furthermore, during this time, the Kingdom of Saudi Arabia (KSA) has seen a remarkable growth in women within the entrepreneurship sector. In KSA, there is a new political emphasis on developing the entrepreneurship sector, and the commitment from the Saudi government to support women is greater than ever before (Lavelle & Al Sheikh, 2013). While there have been some studies into the mechanisms and pathways established for women to rise to this position within KSA, the question remains as to what factors are present within the business ecosystem of KSA that motivates women in this society toward entrepreneurial roles?



Definitions

1. A **business ecosystem** is the network of organizations, including the manufacturers, distributors, suppliers, and consumers, involved in the delivery of a product or service (Moore, 1996).
2. **Entrepreneurship** requires an individual to raise capital, develop a unique selling point, and assume the risks of a given venture (Gartner, 2001).
3. **Empowerment** is defined as providing someone with the capability to be in control of his or her own destiny and habits. It is centered on the notion that individuals should hold the skills, resources, authority, and opportunity to complete their own objectives within business. Nabil Ayad, Director of the Diplomatic Academy of London, discussed the need to explore the gender differences with relation to leadership values in order to empower women toward leadership roles, such as entrepreneurship (Ayad, 2004).

Related Work

This research reviewed literature on theoretical frameworks surrounding women's empowerment, specifically focusing on the process by which women become empowered. Instrumental to this literature was that of Mosedale (2005), who inspired the author's illustrative framework (figure right) recognising the pathway toward women's empowerment as part of a national scheme. This framework matches Kabere's three prongs of empowerment: recognising resources, agencies, and achievements (1999). However, a thorough reading of the literature forces the author to conclude that developed frameworks for the empowerment of women vary greatly based on the national resources and socio-political environment (Mosedale, 2014). Focusing on KSA, this highlights the need for encouraging national change so that women could be recognised as an influence of empowerment on social infrastructure.

Results/ Conclusion

At present, the analysis of the research has identified factors that empower women into entrepreneurial roles, including family, fiscal opportunities, educational experiences, and personal goals.

- 1) For most of the women who completed the interviews, access to education contributed greatly to their success as an entrepreneur; they were able to gain appropriate background knowledge to further explore their career opportunities.
- 2) Furthermore, the ecosystem of strong family and cultural links encouraged women through the culture of promoting strong role models and self-motivated individuals.
- 3) Finally, a number of the participants discussed their mechanisms for overcoming the challenges of financial capital to begin an enterprise. Much of the capital for the initial stages of the enterprise were from the personal wealth of family and friends; however, government loans and experienced entrepreneurial associations contributed to the financial successes. However, for these stages, there is a requirement for the women to be educated regarding the access of such funds.

It is expected that the results of this research can be used to assist in creating a socio-political conversation so that women in the Kingdom of Saudi Arabia may feel more empowered toward entrepreneurial roles so that KSA can further develop its capital.

Conceptual Framework

Based on the literature review, the researcher constructed a conceptual framework that encompasses the key theorists in terms of ecosystems that motivate and empower women toward entrepreneurial systems. This diagram has the three factors in concentric circles. The outer, green circle represents the ecosystem, which encompasses the need for strategic planning and industry knowledge to handle a competitive market. The ecosystem, as a complex entity, requires all components to function together; an individual without industry knowledge or the ability to understand her long-term planning or competition would not thrive (Moore, 1996).



Table 1 Conceptual Framework based on Fallatah (2012)

Push Factors	Pull Factors
Entrepreneurship had always been a dream	Empower Female Working Hours
Seeking self fulfillment	Lack of Job Opportunities
Family Support	Need to Support Family
Government Support	
Professionalism	
Partnership	

The second circle, in red, represents the elements of empowerment. Based on the SM theory (Brush et al., 2012), being empowered requires a balance of familial factors, taking advantage of opportunities, such as education, and the ability to manage both their organisations and their time. The final element, represented by the blue arrows, are the "push-pull" elements, taken from Fallatah (2012). It is crucial for women to understand both what motivate them into entrepreneurial roles and what may be a detriment to their success in this field.

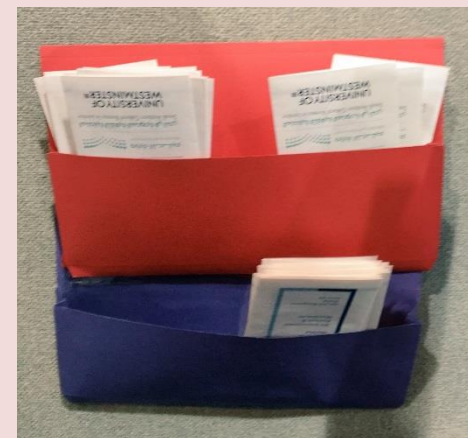
Discussions of business ecosystems are relatively new in terms of academic discourse (Mäkinen & Doldayir, 2012). This evolving definition encompasses a group of firms or organisations that "center their collective efforts on a product, service, or technology, and which transcends a single industry" (ibid.). Business ecosystems create a value for individual participants, in our example, the entrepreneurs, by providing them a community presence of experience and guidance (ibid.). Clarysse et al., 2014). This research has explored the ecosystem of support available for female entrepreneurs within KSA and how this ecosystem has impacted the motivation for women to be empowered into entrepreneurial roles.

Methods

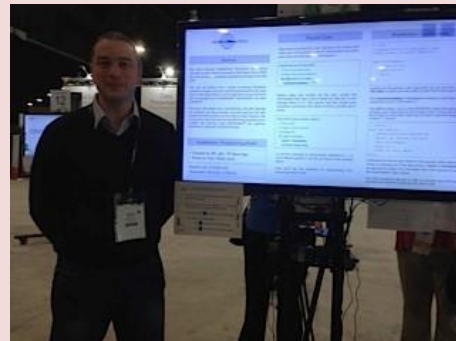
The author examined factors that encouraged women toward entrepreneurial roles in KSA through a series of semi-structured interviews with Saudi female entrepreneurs. Using opportunity sampling, the author recruited volunteers through professional email addresses. Interviews with Saudi female entrepreneurs began in August 2015; twelve women from a range of backgrounds, geographic regions, and fields of business volunteered to complete this stage of the research process. These in-depth semi-structured interviews were carried out in either English or Arabic, based on the individual participant's preference, and translated into English for the purpose of a qualitative thematic analysis. Many of the questions from the interviews were based on similar questions within the literature review; this guided the researcher's analysis of the results (Denzin, 2009).

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E-Posters



Common Mistakes

- Choose the wrong size of the poster while designing.
- Use different font formats for the content.
- Too small font.
- Large spaces between sections.
- Large spaces between paragraphs.
- Include too much text and/or figures.
- Leave preparation and printing of your poster to the last minute

Practise 2

(Evaluation Posters)

- Write down the strengths and the weakness points.
- How can we improve them?
- Work in a group...
- You have 5 minutes to evaluate the posters in front of you



References

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- http://graphic-photo526.blogspot.com/2010/12/blog-post_2148.html
- <https://www.ncsu.edu/project/posters/>
- <http://colinpurrington.com/tips/poster-design>
- <https://www.academyofosteopathy.org/eweb/DynamicPage.aspx?Site=AAO&WebCode=PosterWinners>

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Posters Templates:

- http://www.makesigns.com/SciPosters_Templates.aspx
- <http://www2.le.ac.uk/offices/ld/help-with/posters>

مقالات الملصقات العلمية باللغة العربية

وإستخداماتها (البوسترات) الملصقات

<http://bit.ly/1ywwfEy>

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مقالات الملصقات العلمية باللغة العربية

١١ نصيحة قبل و أثناء تصميم الملصقات العلمية

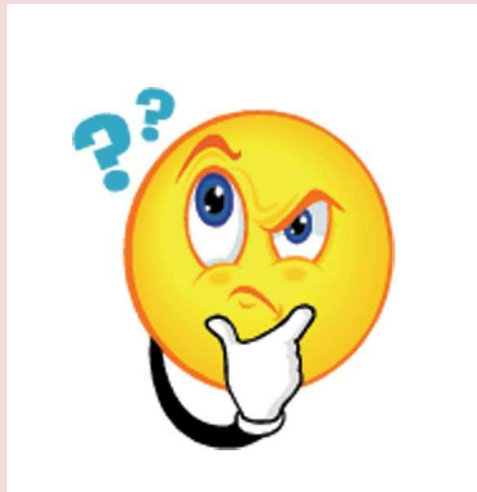
<http://bit.ly/1QfoL4B>

١٥ خطأ عند تصميم الملصقات العلمية وأشهر البرامج للتصميم

<http://bit.ly/1PgCHBe>

Thanks for your attention

Questions!!



Contact Me



ahad_aljurf@hotmail.com



@AhadAljurf

#العلمية_الملصقات

الجرف_عهد_مع_العلمية_الملصقات#