Reading – Why it is important and how it is related to writing?

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STATUARY WARNING

Checking your Whatsapp and Facebook status during the talk could affect your learning process

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Reading is the **KEY** to learning

*Also for writing*

**On your Mark, Get Set... READ!**
How to (seriously) read a scientific paper

By Elisabeth Pain | Mar. 21, 2016, 1:15 PM

http://www.sciencemag.org/careers/2016/03/how-seriously-read-scientific-paper
How they read a paper?

- Read the abstract first
- Skim the introduction
- Quick look at the hypothesis to be tested or verified
- Illustrations, schematics and tables – most important
- If methodology is different than what we follow - Why the authors decide to conduct an experiment in a certain way
- Conclusions/Summary – specific questions are addressed?
- Look at the technical details
- Most relevant points? - things that change our thinking about our research topic or give us new ideas and directions
Approach by one student

“I will save informative sentences from each article about a specific topic in a Word document.”

“I'll write comments along the way about new ideas I got or questions I need to explore further.”

“Then, in the future, I’ll only need to read this document instead of re-reading all the individual papers.”

- Lina A. Colucci, Doctoral candidate, Harvard-MIT Health Science and Tech program
## Passive reading vs. Active reading

<table>
<thead>
<tr>
<th>Passive reading</th>
<th>Active reading</th>
</tr>
</thead>
<tbody>
<tr>
<td>Take a glance</td>
<td>Intensive reading, Take notes, Summarize</td>
</tr>
<tr>
<td>Light reading</td>
<td>Dialogue, Engaging yourself, Kind of meditation</td>
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<tr>
<td>Monologue</td>
<td>Make inferences/predictions, Draw conclusions</td>
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<tr>
<td></td>
<td>Make presumptions on what could happen</td>
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<tr>
<td></td>
<td>Answer questions, Explain to yourself/others</td>
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<tr>
<td></td>
<td>Analyze, correlate and corroborate data with your</td>
</tr>
<tr>
<td></td>
<td>current understanding</td>
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</table>

**READ IT**  **CLOSE IT**  **FORGET IT**
A close Reader …

works like a detective

Reads and Rereads

Uses text evidence to support their thinking

Does careful and purposeful reading

Focuses on
Purpose
Structure
Claims
Continuity – Flow

Reflects
Dear Mohamed,

A month ago, you applied for a PhD position at Uppsala University. We are sorry for being so slow on this recruitment process, but we have had very many applicants. We are now finished with a first screening, and we have selected a few candidates which we would like to test. This test will be done remotely, but is somewhat time demanding. It consists of three different parts, which you are supposed to work on independently. These parts are:

1. Basic chemistry/materials science related to the project, primarily polymer chemistry.
2. **Scientific reading/writing.**

You will be given 4 hours for each part (i.e., 3 x 4 hours). You can do the parts different days.

Are you willing to take these test? If so, when is a good time to start?

Best regards,
Reading – Research – Writing Continuum

Ø “Scientific reading and writing are inseparable and form a continuum with research”

Ø “Teaching strategic, critical reading to graduate students benefits both their research and their writing”

Ø Designed a course, ‘Effective Biomedical Reading and Writing’,

Ø Valerie Matarese “Using strategic, critical reading of research papers to teach scientific writing; the reading–research–writing continuum” Chapter 5, Supporting Research Writing Roles and Challenges in Multilingual Settings, Chandos Information Professional Series, 2013, pp. 73-89
Review

The cell in the ink: Improving biofabrication by printing stem cells for skeletal regenerative medicine

G. Cidonio\textsuperscript{a,b}, M. Glinka\textsuperscript{a}, J.I. Dawson\textsuperscript{a}, R.O.C. Oreffo\textsuperscript{a,}\textsuperscript{*}

\textsuperscript{a} Bone and Joint Research Group, Centre for Human Development, Stem Cells and Regeneration, Institute of Developmental Sciences, Faculty of Medicine, University of Southampton, Southampton, UK

\textsuperscript{b} Engineering Materials Research Group, Faculty of Engineering and the Environment, University of Southampton, Southampton, UK
Highlighting and Taking notes

- **Purpose of highlighting:** To sort points that are important and most relevant for your writing

- **Taking notes:** Make note at the margin – write your opinions, remarks and question for the statement

- Asking correct and sensible questions - best way to learn

- Correlate a statement that is relevant to your work or what you want to emphasize or discuss in your paper

- These points are the building blocks of your paper
Selective Laser Melting (SLM) is an additive manufacturing (AM) technique which has been heavily investigated for the processing of Ti-6Al-4V (Ti64) which is used in the biomedical, aerospace and other industries. To date the SLM processing of this material has been inhibited by the requirement of post processes due to three primary challenges of martensitic microstructures, undesired porosity and residual stresses which are present in the as-built state. This work identifies the state of the art in process optimisation which is being used to confront these challenges in the as-built state with a view to removing the reliance on post processing. Regarding process optimisation, maximising part density is the primary goal due to the negative influence of pores on fracture and fatigue properties. To accomplish this, a high energy input is required which results in high cooling rates during processing. It is these cooling rates which are instrumental in the microstructural evolution and residual stress production. Accordingly novel methods have been proposed which aim to maintain the necessary high level of energy input but control the cooling rates to tailor the microstructure and reduce residual stresses. Research gaps have been identified pertaining to all three of these challenges when considering mechanical properties of as-built components. Thus in its current state post processes remain critical, however promising techniques in early stage development provide encouragement going forward.
Abstract

Selective Laser Melting (SLM) is an additive manufacturing (AM) technique which has been heavily investigated for the processing of Ti-6Al-4V (Ti64) which is used in the biomedical, aerospace and other industries. To date the SLM processing of this material has been inhibited by the requirement of post processes due to three primary challenges of martensitic microstructures, undesired porosity and residual stresses which are present in the as-built state. This work identifies the state of the art in process optimisation which is being used to confront these challenges in the as-built state with a view to removing the reliance on post processing. Regarding process

What is limiting the wide acceptability of SLM as an AM process?

Add a reply...
these challenges in the as-built state with a view to removing the reliance on post processing. Regarding process optimisation, maximising part density is the primary goal due to the negative influence of pores on fracture and fatigue properties. To accomplish this, a high energy input is required which results in high cooling rates during processing. It is these cooling rates which are instrumental in the microstructural evolution and residual stress production. Accordingly novel methods have been proposed which aim to maintain the necessary high level of...
Accordingly novel methods have been proposed which aim to maintain the necessary high level of energy input but control the cooling rates to tailor the microstructure and reduce residual stresses. Research gaps have been identified pertaining to all three of these challenges when considering mechanical properties of as-built components. Thus in its current state post processes remain critical, however promising techniques in early stage development provide encouragement going forward.
Available window of opportunity for researchers to further research in this area
Classify the points – where do you want to use them?
Classify and read each set separately
Populate the mind
Read

Let it feel confident

Let it equip

Let it play

Let it have some fun
THEY'RE TOUCHING!
TRANSMIT!
TRANSMIT!
thud! thud!

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Courtesy: www.PHDCOMICS.COM
I can’t use my crystal ball to predict when you will write better
- Caption by T.S.N. Sankara Narayanan
Breaking the mental barrier

❖ **Daily Practice** – Practice… Practice… Practice…

“Practice makes a man perfect.” With practice, you will start feeling comfortable with writing and will come out with better ways to express your ideas and concepts.

❖ **Initial Resistance** – Not unusual – keep writing – you will soon realize the magic of words flowing freely

❖ **Read** – make yourself resourceful - assimilate and enrich your knowledge; the more you read, the more comfortable you become with writing – it is just a piece of cake

❖ **Review and Summarize** – Prepare a one page summary – post it in your blog page – encourage your friends to read

❖ **Share** – With your colleagues and peers – Get the feedback
“Writing comes from reading, and reading is the finest teacher of how to write”
– Annie Proulx
"I always repeat; read, read, read."

Nadine Gordimer,
All you need is just a hug
Train the mind to assimilate the points and arrange them in an order to write.
Assimilate points from various resources – connect those points to form a circuit – jot down – now you can write
DATA

SORTED

ARRANGED

PRESENTED VISUALLY

EXPLAINED WITH A STORY
The first draft

Need not be perfect

Just have to be written
The first draft

If you wait for inspiration, you're not a writer, but a waiter.
Quiet environment enables us to focus on our writing.
Play some background music to calm down your mind. A calm mind could think better.
...LATER TODAY.

I'll surf the web first.

surf surf...
Avoid distractions
Thank you