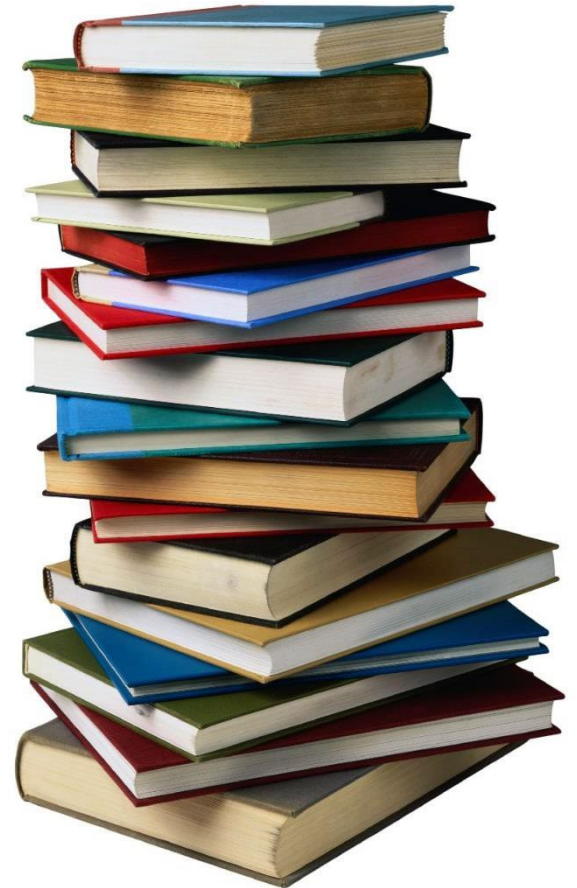


32144 Technology Research Preparation

Identifying the Knowledge Gap in the Literature Review.

Week 4 Semester 1
12th March 2024.

Lecturer Dr John Rose.



In TRP, Your Literature Review:

- **Identifies, evaluates and synthesises** literature relevant to your proposed research topic.
- **Shows how knowledge has** evolved within your field by highlighting what has already been done, what is generally accepted, what is emerging and what is the current state of thinking on the topic.
- **Culminates in Identifying a knowledge gap** (unexplored or under-researched areas) that determines the formulation of your research proposal (fills the gap).

Assumption: All Research is Built on Prior Research.

From this assumption, you can see sound reasons for doing a literature review:

1. Helps you identify work already done or in progress that is relevant to your proposed research.
2. Prevent you from duplicating what has already been done.
3. Helps you to avoid pitfalls and errors of previous research.
4. Helps you design the research methodology (framework) for your proposal by identifying key issues, data collection techniques and measures for success suited to your topic.
5. Enables you to objectively find knowledge gaps in existing research thereby giving your proposed research an achievable goal.

The literature review provides logical, objective and rigorous analysis that justifies your identification of the knowledge gap.

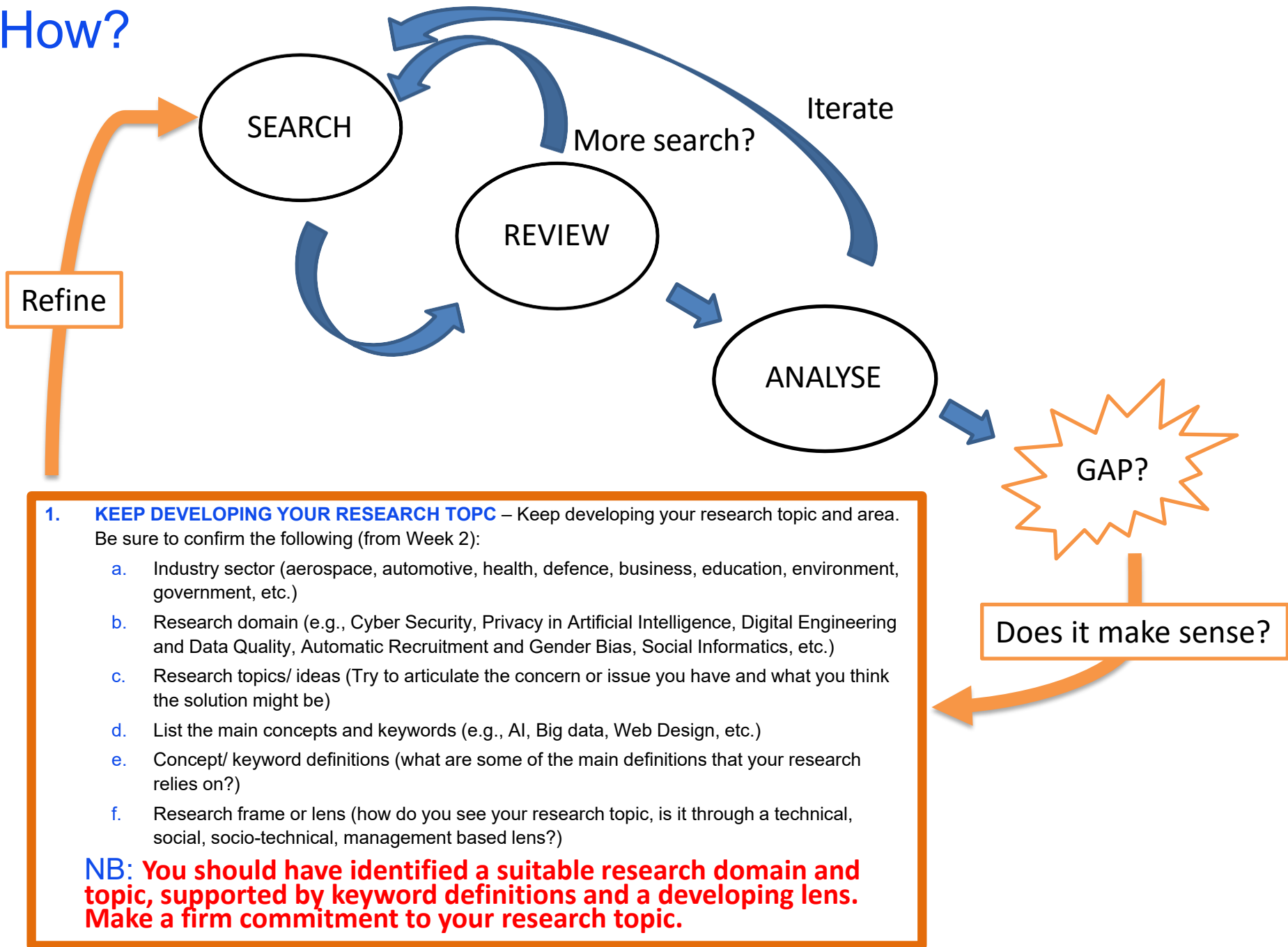
Your research proposal is about how you will fill the knowledge gap.

What is meant by Justification?

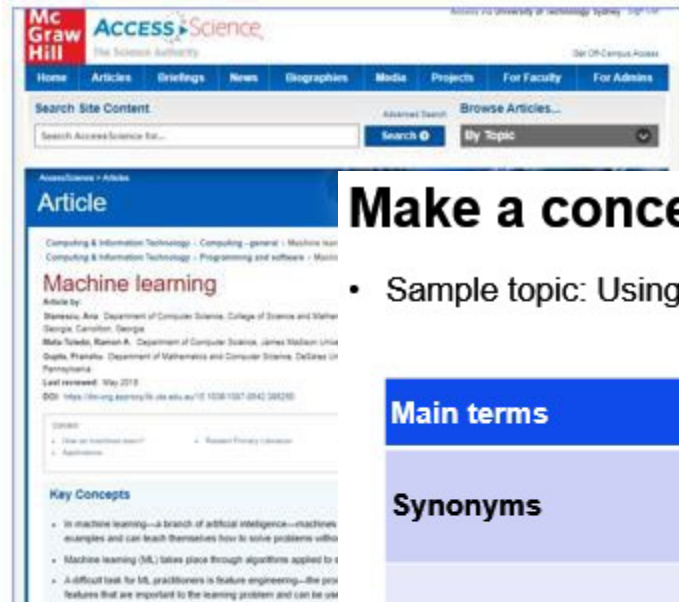
Justification relies on your Literature review supporting the notion that your proposal is “right” and “reasonable”. Justification requires:

1. Using a variety of supported (cited) perspectives (journal articles from independent sources) to counteract introducing bias in analysis.
2. Leveraging and linking concepts from your literature synthesis to support choices in your research methodology (measures, confidence levels, alternatives, and so on).
3. Providing a risk analysis with remediation strategies to cover possible issues that may be encountered in conducting the research.
4. Providing objective support in showing the proposed research is achievable.
5. Undertaking a benefits analysis from successfully completing your proposed research.

How?



Reminder From Meijun Huang's Library lecture



Background reading

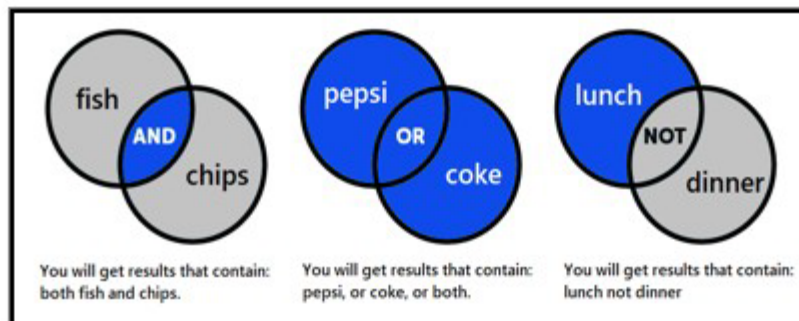
Make a concept table

- Sample topic: Using machine learning to improve medical diagnosis

Main terms	machine learning	medical diagnosis
Synonyms		computer-aided diagnosis CAD

Database search skills

- Identify the **keywords** and **alternative terms** from your research question, and you can reuse the concept table
- Use Boolean operators and brackets to group search terms: AND, OR, NOT. Watch Video [Boolean Operators](#).



- Use "quotation marks" for exact phrases, "machine learning"

d detection
analysis
processing
agnosis
gnosis

Understanding Rubrics – e.g. Assignment 2

TRP - Assessment Task 2	
Criteria	
INTRODUCTION Presents the problem, sets up the field, and states the student's point of view; Clearly stated and well-written aims, objectives and significance of the knowledge contribution of the review; Orients the reader to the report by providing an overview.	20 to >17.0 pts MASTERY Superior statement of the research problem. States aim of research and communicates importance of topic. States main findings. Brief but complete overview of report organisation.

Produce a draft for your Introduction using following bullet points from the Rubric:

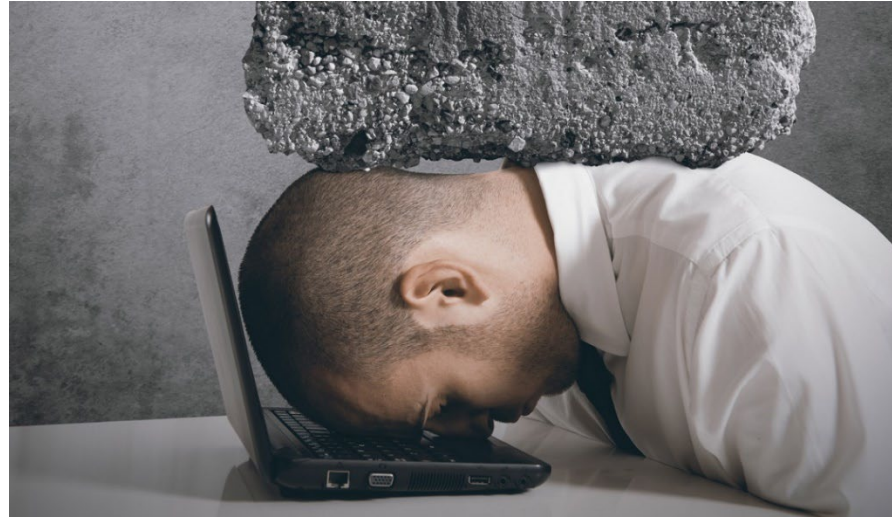
- State the Research Problem
- State aim of research
- Importance of the research
- State Main Findings – what is the knowledge gap that you have discovered?
- Brief but complete overview of report organization.

These bullet points ensure that you meet the requirements of the rubric.

Once you are satisfied, use them to write your Introduction in an appropriate academic style (see Assignment 2 requirements).

Writing your literature review is an iterative process. You MUST make sure that the findings are consistent across the Introduction, Review and Conclusion.

Shut up and write!



Writer's block!

'I am confused'

'I don't know where to start'

'I don't have any original ideas'

'I have no idea what I'm talking about'

So here are my suggestions in the following slides

Just start making notes, write your thoughts!

Because:

Writing helps you to clarify your thinking.

It is a tool to enable deep thought, and show how your thoughts developed.

‘So when we think through what we might write about.... we start somewhere, and then we think out loud. **That idea led me to this idea, and this idea led me to a third idea**, and by the time I arrived at the end of my thinking, I was someplace where I wasn’t at the beginning, and that’s what writing does. **Writing helps us to clarify our thinking process.**’

From: Fu, D and Hansen, J. (2012) ‘Writing: A Mode of Thinking’ in *Language Arts*, vol. 89, no. 6, pp. 426-431

Need more?

You could explore mind mapping tools:

- An interesting 3d tool for ideas and relationships <https://www.thortspace.com/>
- This site compares 10 mind mapping tools: <https://thedigitalprojectmanager.com/mind-mapping-software/>

May I make a suggestion?

Ideation using PowerPoint.

Let's build on **"That idea led me to this idea, and this idea led me to a third idea"**

- **Each PowerPoint slide is an IDEA.** You can make each slide A4 or A3 or larger in size and include other resources (charts, spreadsheets, hyperlinks, pictures....). You can even link a [Google Map](#) (street view, and so on). Of course you can add customised code too (Developer's TAB).
- **One idea follows another.** So the PowerPoint deck organises your ideas. You can do the organising by treating the first slide as the early formative idea and then slides after that represent milestone refinements.
- **Group and Arrange Ideas – bring in related Ideas.** Use hyperlinks to create slide structures (hierarchical, cross-references, logic or decision trees. You can also embed documents and presentations (eliminating the worry of having multiple files).
- **Enabled me to leverage my existing PC skills.** I did not and do not feel constrained. Ideas flow.... Here's a simple example.

Simple Idea Organiser.



Sleeps in



Located in



Which Breed of dog?



Demonstration of ENDNOTE Version 20 PC Desktop.

My current version of EndNote 20.5. The “live” demonstration is using the UTS Library’s endnote download with APA 7 style.



ideation



Articles

About 758,000 results (0.07 sec)

Any time

Since 2023

Since 2022

Since 2019

Custom range...

Metrics for measuring ideation effectiveness

[PDF] tamu.edu

JJ Shah, SM Smith, N Vargas-Hernandez - Design studies, 2003 - Elsevier

... This paper describes four objective measures of **ideation** effectiveness. The theoretical ... one aspect of **ideation** research—the identification of metrics to measure **ideation** effectiveness of ...

☆ Save Cite Cited by 1397 Related articles All 9 versions

> FIND FULL TEXT	⊗	🔗	Boisot, Max	1983	Convergence revisited: the codification and diffusion of knowledge in a british and a ja...	Journal of Management Studies	8/11/2017
✓ GROUPS SHARED BY OTHERS	⊗		Boisot, Max	1995	Information space		13/05/2015
✓ ONLINE SEARCH	+		Boisot, Max	2004	Exploring the information space: a strategic perspective on information systems		8/11/2017
🌐 Jisc Library Hub Discover	⊗	🔗	Boisot, Max	2011	Knowledge management and complexity	The Sage Handbook of complexity and ...	22/01/2014
🌐 Library of Congress	⊗		Boisot, Max; Canals, Agustí	2004	Data, information and knowledge: have we got it right?	Journal of Evolutionary Economics	8/11/2017
🌐 PubMed (NLM)	⊗	🔗	Boisot, Max; Child, John	1999	Organizations as adaptive systems in complex environments: The case of China	Organization Science	8/11/2017
🌐 Web of Science Core Collection (CL...	⊗		Boisot, Max; Li, Yan	2007	Codification, abstraction and firm differences: A cognitive information based perspecti...	Explorations in Information Space: knowl...	13/05/2015
	⊗		Boisot, Max; MacMillan, Ian C.	2007	Crossing epistemological boundaries: Managerial and entrepreneurial approaches to k...	Explorations in Information Space: knowl...	13/05/2015
	⊗		Boisot, Max; MacMillan, Ian C.; Han, ...	2007	Explorations in information space: Knowledge, agents and organisation.		13/05/2015
	⊗	🔗	Boisot, Max; McKelvey, Bill	2010	Integrating modernist and postmodernist perspectives in organisations: a complexity s...	Academy of Management Review	8/11/2017
	⊗		Boisot, Max; McKelvey, Bill	2011	Complexity and organisation - environmental relations: Revisiting Ashby's law of requi...	The Sage Handbook of Complexity and ...	13/05/2015
	⊗		Boisot, Max; Nordberg, Markus; Yam...	2011	Collisions and Collaboration: the organisation of learning in the ATLAS experiment at t...		17/04/2012
	⊗		Boisot, Max H.; Canals, Agustí	2007	Data, information and knowledge: Have we got it right?	Explorations in Information Space: knowl...	17/03/2012
	⊗	🔗	Borgatti, Stephen P.; Mehra, Ajay; Br...	2009	Network analysis in the social sciences	Science	8/11/2017
	⊗	🔗	Borland, Katherine	1991	That's not what I said: Interpretive conflict in oral narrative research		8/11/2017
	●		Börzsei, Linda K	2013	Makes a Meme Instead: A Concise History of Internet Memes	New Media Studies Magazine	8/11/2017
	⊗	🔗	Bos, Erik; Vriens, Christ	2004	An Agile CMM: Extreme Programming and Agile Methods - XP/Agile Universe 2004		8/11/2017
	⊗	🔗	Bott, T, Jackson, John, McTammany, ...	2012	Abandoned coal mine drainage and its remediation.	★ ★ ★ Ecological Applications	18/02/2020
	●		Bower, Marvin	2020	The Way We Do Things Around Here		15/01/2020
	●		Bradley, John	2010	Singing Saltwater Country		8/11/2017
	⊗	🔗	Branham, Stacy M; Wahid, Shahab; ...	2007	Channeling creativity: Using storyboards and claims to encourage collaborative design	Workshop on Tools in Support of Creativ...	8/11/2017
	⊗		Bravo, Giangiacomo	2010	Cultural commons and cultural evolution		8/11/2017
	⊗	🔗	Breslin, Dermot	2010	Generalising Darwinism to study socio-cultural change	International Journal of Sociology and So...	8/11/2017
	⊗	🔗	Breslin, Dermot	2011	Reviewing a Generalized Darwinist Approach to Studying Socio-economic Change	International Journal of Management Rev...	8/11/2017
	⊗		Briggs, Lynelle	2007	Changing behaviour: a public policy perspective. Australian Public Service Commission		8/11/2017
	⊗	🔗	Briggs, Lynelle	2007	Tackling wicked problems: A public policy perspective.		8/11/2017
	⊗	🔗	Briggs, R. O.; De Vreede, G. J.; Nuna...	2001	ThinkLets: achieving predictable, repeatable patterns of group interaction with group s...	System Sciences, 2001. Proceedings of th...	8/11/2017
	⊗		Briggs, Robert O.; Reinig, Bruce A.	2010	Bounded Ideation Theory	Journal of Management Information Syst...	8/11/2017
	⊗	🔗	Briscoe, G.; Marinos, A.	2009	Digital ecosystems in the clouds: towards community cloud computing	DEST '09. 3rd IEEE International Conferen...	8/11/2017
	⊗		Brown, Tim; Wyatt, Jocelyn	2010	Design thinking for social innovation	Stanford Social Innovation Review	8/11/2017
	⊗	🔗	Browne, G.; McPhail, I.	2011	Transition principles: Experiences from the Victorian state of the environment reportin...	Australasian Journal of Environmental Ma...	8/11/2017

Loading References into EndNote from Google Scholar..

Google Scholar

Articles About 758,000 results (0.07 sec)

- Any time
- Since 2023
- Since 2022
- Since 2019
- Custom range...

Metrics for measuring ideation effectiveness

[PDF] tamu.edu

JJ Shah, SM Smith, N Vargas-Hernandez - Design studies, 2003 - Elsevier

... This paper describes four objective measures of **ideation** effectiveness. The theoretical ... one aspect of **ideation** research—the identification of metrics to measure **ideation** effectiveness of ...

☆ Save  Cite Cited by 1397 Related articles All 9 versions



×

Cite

MLA

Shah, Jami J., Steve M. Smith, and Noe Vargas-Hernandez. "Metrics for measuring ideation effectiveness." *Design studies* 24.2 (2003): 111-134.

APA

Shah, J. J., Smith, S. M., & Vargas-Hernandez, N. (2003). Metrics for measuring ideation effectiveness. *Design studies*, 24(2), 111-134.

Chicago

Shah, Jami J., Steve M. Smith, and Noe Vargas-Hernandez. "Metrics for measuring ideation effectiveness." *Design studies* 24, no. 2 (2003): 111-134.

Harvard

Shah, J.J., Smith, S.M. and Vargas-Hernandez, N., 2003. Metrics for measuring ideation effectiveness. *Design studies*, 24(2), pp.111-134.

Vancouver

Shah JJ, Smith SM, Vargas-Hernandez N. Metrics for measuring ideation effectiveness. *Design studies*. 2003 Mar 1;24(2):111-34.

BibTeX

EndNote

RefMan

RefWorks

1. Click on Cite.
2. The CITE box appears with sample styles.
3. Click EndNote
4. Downloads and us imported into EndNote.



Imported References

1 Reference

		Author	Year	Title
		Shah, Jami J; Smith, Steve M; Vargas...	2003	Metrics for measuring ideation effectiveness