Approaches to identify research gaps and generate research questions, 2014

First let's start with a question: what is "research gap"? Research gap is a research question or problem which has not been answered appropriately or at all in a given field of study. Research gap is actually what makes your research publishable, why? Because it shows you are not just duplicating existing research; it shows you have a deep understanding of the status of the body of knowledge in your chosen field; and finally it shows that you have conducted a research which fulfills that gap in the literature.

Researchers, particularly those pursuing Master's or PhD often find it difficult to identify the gaps in the body of knowledge in their own chosen fields. Identifying gaps and generating research questions can be regarded as the first and most important step in writing a research paper. Of course there are many approaches for overcoming this difficulty, but finding original and innovative topics, and distinguishing gaps in the literature is never an easy feat. There are different approaches to employ and not all researchers, especially younger ones, are aware of them. Here, we will try to briefly discuss them.

For starters, considering the gap finding issue, three classes of researchers can be distinguished:

The first class is mainly the class of researchers who act according to their personal enthusiasm. These researchers have complete proficiency in their chosen field which is the result of years of experience or a rich body of knowledge acquired after covering all the important papers in their field of study.

The second class is encouraged by peripheral factors. For instance, a researcher may choose a particular college and a certain professor. That professor might have a

specific project in hand and he may suggest this project to you. The, you would investigate and if the project is close to your expectations for a masters or PhD degree, you will select it.

It is really the same story with **the third group**. Again a peripheral factor, this time not the professor, forces the researcher to select a topic. For instance, the environment the researcher has grown up in, and the needs of that environment, i.e. society, will force him to focus mostly, for example, on agricultural sector.

So far we have discussed three classes of researchers each of whom chooses a topic in a different way. But what if you are not knowledgeable in your field? What if you do not want to choose a topic based on your professor's interest? What if environmental factors are not of importance for you? Well, there are other approaches you can use in order to find a gap, topic or a popular trend in your chosen field of study; some are simple and some other sophisticated:

1. The easiest way would to read specific parts of the articles in your field of study. Of course there may be hundreds of articles in your field, but you have to find the most suitable ones by measuring their value and finding out how influential they are. After finding the most suitable articles (there are tools which can help you in this regard, but we are not discussing them here) you should examine the parts which include **"introduction"** section, which always has a sentence or two about the reasons why that research is done;**" conclusion"** section and of course **"suggestions for future research"** section in which the author of the article, having examined the literature and conducted a research himself, would point his readers to areas which lack investigation or need closer examination.
1. One other approach is to read **systematic reviews**. These papers delve deep into the literature and examine the trends and changes in a discipline or specific field of study and provide summaries of the literature which can in some cases save a lot of research time. Moreover, **content analysis reports**, **citation analysis**

reports and **meta-analysis reports** can be very illuminating and helpful, especially the later which reports the findings of the previous researches.

1. Another approach is to visit the website of the most prominent and influential journals in your field of study. These journals often have a **"Key Concepts"** section which aims to assist the journal's audience to develop an appreciation of central ideas in that field and to approach the content of articles from a perspective which is informed by present debate on aspects of both theory and practice. Key Concepts are usually very short articles and each one is dedicated to one specific topic. They are often written by well-known scholars who are expert in that field of study or topic. There is also a reference section in "Key Concept" papers which introduces the most important papers or books written about that topic.
1. There is another type of paper which is called **"State of the Art"** paper. State of the Art papers summarize the state of knowledge on a specific subject. They delimit research frontiers and identify fruitful and promising areas of future research. They can be classified under systematic review papers.

Now the above mentioned were some general and rather simple approaches to finding gaps, research questions and topics. There are also tools and more sophisticated approaches which can save you research time and give you better overview of the current trends and areas of interests in your field of study:

1. One of these tools is developed by Thomson Reuters; it is called **"Essential Science Indicator"**. Some universities have access to this website. If your college has provided you access to this web site, then you utilize it. It tells you about the most cited papers in each field, the new areas or branches that have been developing in that field. It also identifies the influential individuals, institutions, papers, publications, and countries in that field.
1. You can also use **"Google Trends"** in order to find out if the popularity or interest in a topic is increasing or decreasing, you can also use this tool to compare

various topics with each other and see which one is more popular. Google Trends also provides **"regional interest"** index; this piece of information shows which topic is hot or popular in which country. Another piece of information provided by Google Trends is **"related searches"** which provides queries similar to yours and the name of the authors who are active in the topic you have searched.

There are other websites and tools such as **Social Mention**, **Springer**, **Google Ads**, and **Broad Reader** which provide more sophisticated information regarding the queries such as their popularity, various bars and charts which demonstrate the trends in different time spans, the most recent articles that have been downloaded and their related tags ad etc. You can find a more detailed discussion of these tools in the following mind map:

http://tcfex.com/research-tools-box-ale-ebrahim/

As you work with these tools and manipulate them you begin to understand how they work and which one is best for your field of study. But keep one thing in mind, try to use only one of them and master utilizing it. These tools can save you an enormous amount of research time and effort and open new doors in your life. Do not underestimate their value and start using them.

And, one more thing for professional researchers:

Well, here is a food for thought: what we discussed above was the conventional approaches to gap spotting and generating topics and research questions. However, there always other and new ways of approaching research questions. For instance, Alvesson and Sandberg state that although gap spotting is the prevalent way of constructing research questions, these "established ways of generating research questions rarely express more ambitious and systematic attempts to challenge the assumptions underlying existing theories" (Alvesson & Sandberg, 2011). Thus, they propose an alternative method:

Our aim in this study is to integrate the positive and the negative research agenda by developing and proposing problematization as a methodology for identifying and challenging assumptions that underlie existing theories and, based on that, generating research questions that lead to the development of more interesting and influential theories within management studies (Alvesson & Sandberg, 2011).

They have developed a typology of the type of assumptions that can be problematized in the existing theories and proposed a set of methodological principles to approach the problematization concept. Although appealing, the problematization method can be a bit risky, since it may involve challenging existing paradigms and their underpinning ontological and epistemological assumptions. In fact, Alvesson and Sandberg too mention that "challenging assumptions is often risky, since it means questioning existing power relations in a scientific field, which may result in upsetting colleagues, reviewers, and editors and, thus, may reduce the chances of having an article published" (Alvesson & Sandberg, 2011).

So if you dare, there can always be new ways of approaching research questions, although the method proposed by Alvesson and Sandberg may not, for obvious reasons(!), be suitable for young researchers at all and as all university professors tell their students, "don't try to take on too ambitious projects at first".

References

Alvesson, M., & Sandberg, J. (2011). GENERATING RESEARCH QUESTIONS THROUGH PROBLEMATIZATION. *Academy of Management Review*. doi:10.5465/AMR.2011.59330882