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Mind the gap!

From traditional and instrumental approaches of source evaluation towards source consciousness

Abstract
This article gives a critical review and investigation of traditional generic ways of teaching source evaluation and source criticism. Furthermore, it aims to investigate a new approach to address this area of information literacy instruction for teaching librarians. While traditional approaches focus on evaluating the source at hand, this study offers a perspective to supplement this with a more reflective perspective.

The emphasises in this article is the need to focus on source consciousness *though the newly developed model MIND (motivation – intention – need – debate). The goal is to supplement the traditional approaches of source evaluation where only the source is being assessed and no self-assessment is addressed. MIND also binds the searching process and source evaluation closer together and attempts to address the complexity of working with different sources. This approach does not attempt to replace former source evaluation processes, but rather to supplement it.*

Keywords: information literacy; source consciousness; source evaluation; source criticism; critical information literacy

Introduction
Ever since the age of Enlightenment we have been encouraged to be critical and question the so-called established truths. This has further developed into the field of source criticism, or source evaluation. As we are becoming increasingly more educated and faced with a vast number of sources, distinguishing trustworthy sources from the more unreliable ones is a highly sought-after skill. Andrew Whitworth (2009) has stated that there is so much information available to us, and much of it of so poor quality that we should be talking not only about information overload, but also about information obesity. Nonetheless, studies have shown that students often rank source evaluation as

the least useful part of library instruction, or that they do not fully incorporate what they were taught during library instruction in terms of evaluating sources (Angell & Tewell, 2017; Bird et al., 2011; Daland, 2015). They are also fairly confident in their own abilities, thinking that they are well apt to find reliable sources. Other studies have shown that there is a discrepancy between what students say is important vs. how they perform in source evaluation situations and that most students new to research have difficulty defining their information need and do not naturally evaluate texts (Silva et al., 2018, p. 26).

Being able to critically evaluate sources takes time and demands familiarity with the subject at hand, and the research in that area. As an unexperienced student evaluating established researchers work and deeming it adequate or not would most likely be seen as very challenging. Sinatra & Lombardi (2020) describe this as the challenges of source evaluation in the "post truth era", and further emphasise that "explicitly reappraising plausibility judgments may be a crucial addition to evaluating the connections between sources of information and knowledge claims" (p. 128). This is part of becoming a researcher and developing a deepened understanding of the field at hand takes years. Studies like List & Alexander (2018) indicate that students may have the knowledge of source evaluation but may not apply it. Being familiar with the information, research, and literature available can be considered step one, while understanding it and being able to use it is step two. The ability to understand and further critique established knowledge in a field is a vastly more advanced step, which may take years of effort to be able to master.

Different subjects deal with source evaluation in different ways. History will deem sources which are of little interest to other subjects highly interesting. Often because of the age of the source, but also because historical sources are not necessarily academic texts. It may be time to start talking about source consciousness in addition to source evaluation and source criticism. Source consciousness means that you do not judge the quality alone of the source as a one size fits all approach, but whether it is fitting of your needs. The value of the source is not constant as it may be deemed trustworthy, but at the same time irrelevant in another given context (Russo et al., 2019, p.308).

Source evaluation is a highly complex field, and the focus is on evaluating authored texts. But what about the student, or researcher's role in creating their text? Are they being critical of themselves? Are they taking responsibility for how they find, choose, and use information? The aforementioned study of List & Alexander (2018) indicates that they are not, and that the discrepancy in students' reported and demonstrated skills regarding source evaluation seem to stay unchanged. Further they conclude that "As a whole, this study provides evidence for a multifaceted approach to developing and accessing source evaluation" (List & Alexander, 2018, p. 213), providing a solid argument for moving onwards from the traditional and instrumental approaches and towards *source consciousness*. The question asked in this study is: how can we as teaching librarians further develop and elaborate the view on sources from source criticism or source evaluation into a more reflective practice of source consciousness to help students develop a more independent relationship with their academic work? A new approach to evaluating sources called MIND (Motivation – Intention – Need – Discussion) will be presented in this article as an addition to the existing approaches of source evaluation to promote source *consciousness*.

Source consciousness

Encyclopædia Britannica defines the term consciousness as 'Consciousness, a psychological condition defined by the English philosopher John Locke as "the perception of what passes in a man's own mind' ('Consciousness', 2020). Further the term has been defined as being awake or being able to understand. Cambridge dictionary's definition describes consciousness as 'The state of understanding and realizing something' ('Consciousness', n.d.). Being aware of one's own prejudices, information behaviour and strategies for locating and selecting information can be a conscious process where you

have a 'perception of what is happening in your own mind' as you are going through it. It also brings up the question of ethical use of sources. Not only by citing sources the correct way but being aware of *how* and in *which context* they are being cited, in order to not change the meaning behind them.

Source consciousness is not yet a commonly used term in library science and will be presented in this study as a new approach. Source consciousness in this setting means looking for a transparency of reasoning and arguing why choices were made rather than just focusing on evaluating the texts one is faced with. The end goal is to reflect upon choices and be mindful of why the selected sources ended up being cited in the finished product and why others were merely a part of the process. This article is intended for teaching librarians who wish to incorporate a more reflective way of teaching source evaluation. The MIND approach may be used as a means for discussion for the librarian or as an aid for students in their selection of sources.

Method

This study has critically reviewed and analysed traditional approaches to source evaluation. The three approaches that have been assessed are CRITIC, CRAP/CRAAP and the 5 Ws. The three approaches have been compared to each other and further been critically analysed to assess whether they offer a comprehensive understanding of the challenge of evaluating sources. A thorough literature search has been made to investigate what has been written about source criticism, source evaluation and source consciousness. The search has been carried out in EBSCOHOST Library, Information Science & Technology Abstracts. This search shows that little research has been published about source consciousness, and more on source criticism and source evaluation. The approaches have further been discussed considering a sociocultural understanding of IL (Hicks & Lloyd, 2021, 2016; Lloyd, 2017).

Mapping of the field

In this section the mapping of the field of source evaluation in academic librarianship is described. Source evaluation is considered an important part of information literacy and the academic practice, and something that can be quite challenging for students (Bartz, 2002; Daland, 2017; Mason et al., 2018). A study in librarianship also show that source evaluation is considered an important skill for journalists. 'A journalist's credibility and livelihood depend on their ability to locate, evaluate, verify, and accurately report credible sources […]' (Bobkowski & Younger, 2020, p.822). Locating good sources is often described as the most complex part of information literacy (Bårnes & Løkse, 2015). One is advised to reflect upon what kind of sources one wants to locate and where to look for them. This is an organised approach and may be helpful, but it may also take away from the creative process and being subjected to a range of different sources that may apply in the process of thinking and understanding, though these sources may not actually be cited in the finished product. This also argues for the processes of seeking information and source evaluation being more integrated with each other as a whole.

Traditional generic approaches to source evaluation have some limitations. Mostly that they aim to give an answer to something too complex to be answered. And while a generic approach like a checklist may feel good upon completion, it requires prior knowledge that the students simply may not have (Russo et al., 2019, p. 296). Neither does it engage the students in a way that makes them reflect upon their own information behaviour and information needs. Even though they are given training about distinguishing the difference of sources, they may not really grasp this when faced with a vast number of sources and must decide as to which they choose to use. "Finally, it is difficult to discern how the use of such checklists develops the skills and transferable knowledge necessary for more advanced evaluative tasks"(Russo et al., 2019, p. 296). Or, in other words, how sources and the evaluation of them is highly reliant on context and the information landscape at hand.

Traditional views of source criticism can be challenging in library instruction as well-developed skills in source criticism require experience and acquaintance with one's own subject and experience in selecting adequate sources. Often, librarians are left with the option of one-shot-instructions that may force the librarian to focus on generic skills without the option of linking them to the subject at hand (Daland, 2017, p.93).

Source criticism skills can be difficult to teach, as much of it is based on tacit knowledge connected to familiarity and knowledge about the field of research. A study from USA looks at the concept of authority in library instruction session and conclude that students do not feel like they have the authority they need to be able to properly assess sources, and that they put too much emphasis on indicators like databases or publishing channels, while others are confused with the difference between a scholarly journal and a newspaper (Angell & Tewell, 2017, p.109).

A Norwegian study from 2020 concludes that even though students have the know-how, they may not use these skills when faced with the challenge, but rather choose a more convenient solution. This study is conducted by teacher education researchers, offering another perspective into the information literacy field. 'Overall, our findings indicate the teachers had some insight into how to evaluate digital content but tended to prioritise convenience and to access the resources that were most readily available' (Gudmundsdottir & Hatlevik, 2020, p.51). The article further argues for greater awareness among teacher students and teachers for what they call digital responsibility.

Other studies have focused on the limitations of traditional library instruction source evaluation because users may have few clues as to the source or sponsor of the information and that instruction should emphasize understanding authorship cues, purpose of a site, and currency (Bird et al., 2011, p.185). Instruction often takes an instrumental approach to teaching these skills because of the limited time provided. One shot instruction does not provide librarians to fully delve into the complexity of the issues at hand. To provide the students with some tools for evaluating sources, they are often provided with checklists in a generic approach (Sundin & Carlsson, 2016, p. 992). . Although checklists have their limitations, there are also great advantages to them. They are easy to remember, and they help get students started with a complex process. The issue is not necessarily checklist or no checklist, but rather what we want students to get out of them.

Of the research on source evaluation, much of it focuses on LI or approaches to teach students and pupils skills for critically evaluating a source. Less focus has been given to how sources are selected and what their intention is for the use of this source in their text. There seems to be a distinct polarization between what is considered a good source and a bad source. In a caricatured approach, this can be described as the battle between the good, peer reviewed, academic texts that are considered the heroes trying to inform and educate, and, on the other side, the bad villain texts trying to deceive and mislead. While this can be the case, it is in most cases not. There is no short-cut to finding the right sources, and there is no guarantee of finding all the sources you need. The amount of information available is simply too overwhelming. An author needs to locate adequate sources and be aware of why he or she decided to include them in their finished product.

Source criticism and critical thinking

Source criticism or source evaluation has long been the ideal for academics. Critiquing is one of academia's most known traits. However, how does this affect us and the texts we write? Could it be more fruitful to focus on source consciousness? The main goal of critical thinking is to question and challenge with the intention of confirming or disputing established knowledge (Eriksson, 2020). In my own experience, source evaluation and information searching has been considered separate steps

of information literacy instruction. This can also be supported by Haider and Sundin (2019, p. 111) who describe how teachers do not identify their students' abilities of searching as a problem, but rather the critical evaluation of the results. The skills also seem separated in the The Association of College and Research Libraries (ACRL) guidelines, where searching, evaluating and using information is described in separate bullet points (Association of College and Research Libraries, 2000).

However, the skills of searching and source evaluation are so closely linked together in source consciousness that it is difficult to talk about one and not the other. Source evaluation happens in the evaluation of the search results, yes, but also in the searching process itself, not to mention the preparation for the search. When applying the method of *success* (Zins, 2000) students are encouraged to think of What, Where, Words, Work and Wow. Starting with *what* (what is your research question) they are encouraged to limit their question to location, gender, age and so on to get a more manageable result list when they start searching for information. Further in *where* they must consider where they think useful information can be found. Sometimes they will need a scientific article, other times they need a newspaper article to cover their information need. In this question they need to get an overview of different databases and assess the pros and cons of these and their relevance. The next step, *words*, makes the students find the words they think are relevant for their query. They are also encouraged to assess whether the words they choose are neutral or biased. Choosing biased search words will affect their result list and further their selection of sources. Many students have never considered this to be a problem before and see this as an eyeopener. They are also somewhat surprised that the stage of the actual search, or *work* is fourth in this approach. After the preparations and reflection, they are free to start searching for information. The final stage, *wow*, encourages the students to evaluate their results and make changes to their choices before they repeat their search. The biggest advantage of *success* is the reflective practice and that it forces students to think about their search strategy and information needs more than a mechanical approach where they are simply introduced to several databases and how to use them. The success approach also highlights that source evaluation may be relevant before the final stage of *wow* as the students are encouraged to critically reflect upon their selection of search words and databases.

Different sources have their place in different settings. Evaluating or critiquing sources indicates that some sources have a greater value than others. But is a sources value unchangeable? We are taught to evaluate sources through a set list of criteria. And students mistakenly believe that search engines screen for quality and may give too much credence to the look of the page itself, thusly oursourcing the critical evaluation to the search engines (Lorenzen, 2001, p.162; Sundin & Carlsson, 2016, p. 999).

Traditional approaches of source evaluation

Three well-I approaches to teach source evaluation is CRITIC, CRAP/CRAAP and the 5 Ws. These approaches will be presented and discussed in the following.

CRITIC

> "Developed by Dr. Wayne Bartz, the original CRITIC Acronym is a simple methodology designed to help students remember the scientific method. To reinforce student learning of this methodology, Bartz developed an assignment that requires his students to use CRITIC to evaluate paranormal claims in the media" (Matthies & Helmke, 2005, p.65).

Dr. Wayne Bartz states that this acronym "provides neophyte skeptical students with an easy-to-remember, step-by-step format for applied critical thinking" (Bartz, 2002, p.42). Further he claims that "Most college students slouch into the first day of class assuming they already know a great deal about the world around them. As a result, they may have to unlearn an accumulated wealth of misinformation in addition to absorbing the priceless new pearls of wisdom teachers toss their way. An improvement in critical thinking skills should facilitate that sometimes painful process" (2002,

p.42). This model is perhaps the most student-negative one. It assumes that students have no knowledge and that they are arrogant and miseducated and need to unlearn what they have learned in the past to give room for new and valid knowledge.

The acronym focuses on *C-Claim*, where the student must be able to measure the fallibility of the claim at hand. *R-Role of the claimant* assesses the author of the text and what their motif for writing it may be. *I-Information backing the claim* focuses on what evidence is provided and whether it can be verified. T-Test asks if there is some reason to doubt the claim and how it can be tested. I-Independent learning looks for confirmation of the claim through for example peer reviews. *C-Cause proposed* asks "what is held out as a causal explanation for the claim and is it consistent with the physical laws of the universe?" (Bartz, 2002, pp. 43–44).

The CRITIC approach positions itself in a distinctly critical convergence. The text at hand is put under a thorough critical analysis. The author's authority is challenged and evaluated in connection to who they are and how they can prove credibility. The students being taught these skills seem to be considered by Bartz to be unaware and uninformed. The main idea of this approach is to teach students a critical approach and be sceptical towards text they encounter. CRITIC provides the students with a helpful acronym, but the approach may be more appliable in subjects like mathematics and science where there are more right and wrong answers. This approach has a lot in common with the 5Ws as it focuses on the credentials and intention of the author. It distinguishes itself from the other approaches by focusing greatly on testing. This makes this approach less applicable to subjects in humanities and social sciences as they are generally not focused on quantitative measures that can be tested in a traditional way. This approach does not offer a reflective practice where the author's choices and motives are challenged. There is a sole focus on the text's value based on the criteria in the checklist.

CRAP/CRAAP

CRAP (currency, reliability, authority, purpose/point of view) (CCC Online Library, 2019) or CRAAP (currency, reliability, authority, accuracy, purpose) (Meriam Library California State University, Chico, 2010) was developed by Molly Beestrum and focus on a checklist for assessing sources using the CRAP/CRAAP acronym. The difference between CRAP and CRAAP is that CRAAP also includes accuracy in the checklist.

Currency focuses on timeliness, publication date, revisions and functionality of links. *Relevance* where the focus is whether the text is relevant for your needs and if it, in fact, provides the answers you need. This step seems to put more responsibility on the authors and the choices they make in selecting sources. *Authority* focuses on the source of the information, meaning the author, publisher or other. Here the credential of the author is being viewed and assessed. In accuracy "The reliability, truthfulness, and correctness of the content" (Meriam Library California State University, Chico, 2010) is assessed and if the information has been reviewed or if there are mistakes made in spelling, grammar and so on. The last point is *purpose* where the purpose of the information is questioned. Is it to inform, teach, sell, entertain or persuade?

The CRAAP test is also a critical approach, evaluating the value and reliability of the source, but is also provides the student with encouragement to reflect upon their information needs and what they intend to use the source at hand for. It also has similarities to the 5Ws as it questions who, what, when and why. An interesting difference is the focus on 'relevance' and whether the source fits the needs. The acronym itself has a negative connotation to it in terms of judging sources as crap, or not valuable. This might be useful to students as there truly are bad sources of information available, but in their academic work most of the sources they are faced with will be academic sources from their curriculum or library databases. While many of these will not hold a full scientific value, few of them

would be considered as "crap". However, this approach seems to encourage independent thinking and reflection more than the other two.

The 5 Ws

The five Ws does not provide an acronym like the other approaches, but encourages to ask critical questions to assess the source at hand. The origin of the 5 Ws is difficult to retrieve, but is has been described in several information literacy webpages and in studies (Daland, 2017, Radom & Gammons, 2014). "The five Ws may be a simplifying way of explaining source criticism, but it still provides the librarian with an outline to approach bibliographical data that is important when assessing sources" (Daland, 2017, p. 98). The 5 Ws are the questions of *Who* the author is and what are their merits and affiliation, *what* kind of text it is, i.e. a blog post, a web page or an academic article. *When* was the text published? *Where* has the text been published? Is the publisher reliable, and is there a peer review procedure? *Why* has this text been written and published? And finally, *how* is the text presented regarding language, accuracy and objectivity?

The 5 Ws encourages a critical approach to evaluate the text but does not encourage self-assessment. The critical approach is merely focused on the text at hand and not why the students themselves would consider this a suitable source or not. There is also no focus on relevance for the work at hand. Students may be led to believe that as long as a text has all the academic criteria, it may, and should be included in their text.

The 5 Ws and CRAP/CRAAP approaches are very similar, but the CRAP/CRAAP acronym may have an advantage as it is easier to remember. The CRITIC approach is also similar to the other two but differs in that is seems more complex and extensive. The main idea is still to assess the source as such, and not self-assessment for the author. The only approach that offers some encouragement for critically assessing one's own motives and intentions is the CRAAP test. The checklists still offer a valuable approach to assessing and selecting sources, but a reflective supplement could be very fruitful in approaching this. A very valuable part of checklists is that they teach students to locate relevant factors of an academic text like publisher, publishing year and so on. Most students will not be familiar with bibliographical data and getting acquainted with this will be of great value to them.

Theoretical framework

This study employs IL theory of sociocultural perspectives on IL. Annemaree Lloyd and her view of IL as a sociocultural practice (Hicks & Lloyd, 2021, 2016; Lloyd, 2017; Lloyd, 2006) is applied. Information literacy is not a single transferrable skill, but a complex process that is constructed in social settings and in collaboration with others transferred to knowledge.

> "This knowledge, in turn, provides a person with the capacity to think critically about information, which is inherent in the contexts of their IL practice. The practice has, therefore, relational, situational, recursive, material and embodied dimensions, which are drawn upon to make it meaningful" (Lloyd, 2017, p. 93).

A sociocultural approach to IL argues that IL skills are not generic and transferrable, but rather discipline specific and therefore made in the learning environment at hand. This is highly relevant for source evaluation as different disciplines view sources differently. It is also a holistic approach that encourages reflection and assessment rather than a more shallow and insubstantial focus.

Lloyd describes IL landscapes as a principal element of the theory of IL and these landscapes are constituted through social, epistemic/instrumental, and physical corporeal information modalities which reflect the stable and established knowledge domains of a social site (Lloyd, 2017, p. 94). To

navigate these landscapes takes time and familiarity, explain why a mere checklist would not give a full insight to how to navigate sources.

MIND: An approach to source consciousness.

While the traditional approaches have their strengths, there is still need for a look into a more reflective practice. Like the success method offers a more reflective practice of information seeking and information needs (Zins, 2000), this may also be needed in the process of evaluating sources. Further, believing that IL skills is one single way of knowing, not being context dependent, will limit our understanding (Hicks & Lloyd, 2016, p. 335). Information needs and behaviours will, in most cases, depend on the information landscape, situation and subject at hand.

The complexity of information seeking and evaluation can be challenging to get through to students, even when it is presented and encouraged in instruction. Angell & Tewell (2017, p.99) conclude that students need to strike a balance between their opinions and the texts of others before they can begin to establish themselves as authorities, and further (p. 107) that the participants in their study generally accepted the sources they located as being trustworthy, and that fewer students supplied their own personal interpretations of trustworthiness and credibility that went against the grain of dominant voices.

Establishing knowledge, and further authority in a field is a complex and time-consuming process, in which navigating the information landscape through affordances is a large part. Assistance will also be needed through the process of getting familiarised with the landscape (Lloyd, 2006, p. 572). Some of this learning will happen through mentoring from more experienced professionals or peers, and other through experience. There is a difference between using a source in the process of learning and reading up on a phenomenon and choosing to let that source be part of your theoretical framework. Familiarity with the information landscape at hand will make the distinction between the two more recognisable.

As an attempt to supplement the area of source evaluation and highlight the need for more reflectiveness and self-assessment in the process of selecting sources, the MIND (Motivation – Intention – Need – Debate) approach has been developed. The main idea is that source evaluation should also be source consciousness, where sources are approached with mindfulness. The student, or researcher should be mindful of one`s own prejudices and limitations and aspire to academic honesty and integrity, where sources are selected based on their value for the text, not to support biases or simply because it possesses the right criteria to be deemed an academic source.

The MIND framework has been developed by the author, an academic librarian at the University of Agder, through years of teaching source criticism and through conversations with students and colleagues, trying to make a complex area comprehensive and tacit knowledge explicit. The existing checklists provide a helpful starting point, but it seems what is missing is encouragement for reflection and awareness of one's own choices. MIND also attempts to empower students in their writing process by making them take responsibility and make educated choices. They should be asking themselves "what do I want to contribute to the academic debate?" and "how am I driving in terms of academic professionalism?", not only "what sources are acceptable to use?". MIND is not intended for only one level, but a suggested approach to a more reflective practice in academic writing for all levels. However, it may be most applicable to students who are familiar with general source criticism. MIND's main goal is to encourage independence, reflectiveness and source consciousness for the authors and their own choices rather than just evaluating the sources found.

MIND: motivation – intention – need – debate

Motivation:
What is the motivation for using this source?
It is suitable for your text? Or was it just easy to find? Are you proving familiarity with the subject by citing sources that hold authority in the field?

The motivation can also be that is supports the authors prejudices. Have you self-assessed your choice? Most people will opt to seek documentation to support their beliefs or hypothesis. This is an important part of supporting your claim, but you also need to take part in the academic debate. This means challenging yourself and your hypothesis. Citing classics that proves your familiarity with curriculum and the subject is also important. The choice of sources should prove that the author of a text is well-read and oriented, proving the author's familiarity with the information landscape at hand as they have moved from novice to expert, or, in other words, has become an information literate (Lloyd, 2006, p. 571). Some sources are simply expected to be referenced and leaving them out should be done intentionally.

Intention:
What is your intention for the use of this source in your text?
Is this source an example of a phenomenon or a part of your theoretical framework? Will it serve as an academic brick in your text's foundation? Or are you trying to highlight a current example?

If the intention is to bring a current example into your text, a newspaper article may serve as a good source, and it can be a subject of the discussion you are trying to illuminate. If the intention is to provide a sound theoretical framework, you need to assess the source in a traditional way and make sure it holds up to academic standards and provides you with information that holds up in an academic discussion.

Need:
Do you need to cite this source?
Are you just reading up and informing yourself or is this the best source available to you?
Does this source support your process or your finished product?

While many unacademic sources hold interesting information, they are not suited for supporting an academic argument. Some sources serve their purpose as the foundation of knowledge before you get to the level you need for your text. This means that you can read and learn from several different sources, and they may provide you with a useful foundation to further investigate more complex academic sources. It is common to start your learning with textbooks and introductions to get an overview and understanding of the phenomenon you are studying. This provides the foundation of your knowledge that allows you to build onto it and better understand research that investigates a small section of a field in greater depth. To understand details, it is important to understand the bigger picture. From a socio-cultural perspective this means that one engages "information that facilitates working collectively to develop intersubjectively shared understandings" (Lloyd, 2006, p. 574). But while this is important, it does not necessarily mean that these sources should be the ones to be cited in your text. The most famous example of a clear reflection of whether to cite a source is perhaps Culumber et al. (2014) where their article was mistakenly published with the caption 'Should we cite the crappy Gabor paper here?' in the parenthesis (Ferguson, 2014). The authors saw the Gabor paper as relevant, but not really good enough to be cited in their work. The proper

> citation has since then been added to the article and the humorous parenthesis has been removed.
>
> When writing on a higher academic level, you may need to consult primary sources and not just the discussion of them from other authors. This is more time-consuming but will eliminate the possibilities of misciting a source due to misunderstandings though a second-hand source. Even trusted sources of information can be misleading, because they may have cited a source incorrectly, or you may be reading the citation out of context (Osborne, 2018, p. 105).
>
> **D**ebate:
> Have you found contradicting sources? To make an interesting discussion it is vital that more than one side of an issue is highlighted.
>
> Finding contradicting sources may be challenging, but it will strengthen your text and make it more interesting. It will also make it easier to write, as a debate of different opinions highlights different propositions to the subject at hand.

Applying MIND

One of the main points of this approach is to put some responsibility onto the author and why they choose to use the selected sources. While traditional approached aim to evaluate the external written source, MIND has the intention of making the author reflect upon how the selected source fits into their text and how it brings value and relevance. The value of a source is not a constant, but rather relative to the context of which it is being selected and used. Transforming from a novice to an expert entails engaging with texts and further with the landscape that "[…] reflects the social, historical embodied and negotiated experiences of the community of practice and the sources of information valued by the community" (Lloyd, 2006, p. 575).

While traditional approaches have the advantage of offering a generic approach to judge whether a source is trustworthy, it does not necessarily make students reflect upon their choices and how they intend to use the sources available to them. Informed by a sociocultural understanding of IL as situated, MIND attempts to make the students reflect upon their choices, not only evaluate what the author of the text at hand intended when writing it. It also poses the question of whether one *needs* to include the source or not. Teaching librarians may wish to use MIND as a checklist for themselves to start a discussion with students, or they may want to use it explicitly to have students assess their consciousness in their selection of sources. MIND would be likely to fit teaching as a master's level when students are familiar with the general concept of evaluating sources and are starting a more independent academic product like a masters' thesis.

Discussion

Hicks & Lloyd state that "As a practice, information literacy (IL) is shaped, reproduced, and transformed by social and public discourses" (Hicks & Lloyd, 2021 p.1). This construes a challenge for generic checklists. Academic texts – can be valid or invalid due to the context in which they are used. For example, if one is studying a social phenomenon, how this is presented in written texts will be affected by changes in legislation, historical events and so on. This means that if a text is written before an important change of legislation, it may hold no validity to your text. Or, on the other hand, it may serve as an excellent example of what is debated in the text. Furthermore, if one is only looking for sources' validating one's prejudices, the discussion in the paper will be of poor quality. Getting familiar in the academic landscape is a time-consuming process, as Lloyd (2017) has demonstrated. This might also explain why experienced researchers handle source evaluation better than new students as described in a study by Brand-Gruwel et al. (2017). This can further construe how and

why skilled researchers develop a deeper sense of what can be described as source consciousness. They will have the advantage of a deeper prior knowledge to make it possible for them to reflect and question established knowledge differently. This is a skill students should also be encouraged to master through navigating the IL landscape they are venturing into.

There are many types of sources and not all are written. An interview can for example be an important source of information. In choosing interview subjects, a reflective process is as important as choosing written sources. One needs to argue for why these people have been selected for the interview. What information and perspective do they bring to the discussion and what is left out when choosing these informants? It can be easy to choose informants based on convenience and not necessarily advantageousness. Deadlines, practical issues of transport and lack of networks can make this challenging. Yet, in my own experience when selecting informants, there seems to be a lot more emphasis on justifying the selection and arguing why this perspective will provide us with a valid and valuable perspective than when selecting written, peer reviewed sources. Perhaps related to the *cognitive authority* (Wilson, 1982, p.14) we assign peer-reviewed texts whereas conversations or interviews are seen as opinions. The stamp of approval of being a true academic source with everything that entails can sometimes seem to out outshine the importance of relevance and what the written source brings into the discussion.

The approached covered in this study (CRAP/CRAAP, CRITIC and the 5 Ws) offer a good introduction of how to evaluate sources and how to distinguish an academic text from a non-academic one. For unexperienced students this is an important skill to master. It is also important for students to develop into independent participants in the academic debate. This means that they must make conscious choices of what sources they select and why they chose to do so. They must also use these sources in such a way that they do not change the intended meaning behind them and thusly practice poor ethical use of sources. This aspect is less frequently addressed in source criticism checklists, but a very important part of the general sense of decorum.

However, checklists can be useful tools if they are able to encourage reflection and independent thinking and assessment of both texts and one's own prejudices, like the MIND framework attempts to do. Teaching librarians must be conscious of how they teach students to handle information and the assessment of this. Rather than providing a checklist to give all the answers, they should inspire students to consider different approaches and execute self-assessment in addition to the evaluation of the sources at hand. They should be aware of why they are selecting the sources they have chosen and how they intend on using them or be *conscious of sources* in addition to being *critical of sources*. They should also be aware of *how* they use the selected sources and do so in an ethical way, making sure they do not change the meaning of the text they are citing.

MIND suggests a socio-cultural approach to evaluating sources, where not only source criticism, but *source consciousness* is applied though a reflective process applied in the present information landscape. Source consciousness is constructed in subject specific settings and in collaboration with others. The focus on *debate* encourages students to include sources that disagree with their starting point, and though this improves their own discussion and further, their contribution to the academic field. MIND could also function as a frame for a discussion regarding selection of sources where the motivation, intention, need and debate must be defended and reflected upon by the author of the text. Having consciousness and awareness of why sources have been selected will most likely also deepen the academic understanding. Becoming information literate means that we understand what information is important and valuable in our information landscape, and further develop a reflective consciousness that makes transformations possible, making us "better students or better workers, better knowers of our landscape and its situated practices" (Lloyd, 2006, p. 578)

The value of sources

Being source conscious means accepting that the value of a source is not absolute. In the process of reading up on a subject, the academic criteria may not have to be met as this serves to lead you to a fitting source. Authority is often mentioned as an important aspect in source evaluation. But who is an authority in the field? And how can one establish one's own academic authority? Patrick Wilson introduced the term *cognitive authority*, where a person has authority not because they were appointed or elected to a position of authority, but because they influence other's thoughts. This authority is highly linked to credibility and expertise, emphasizing that there is a difference between knowledge and opinion (Wilson, 1983, pp. 14-16). According to Angell and Tewell students can begin to establish their own academic authority when they "[…] learn to strike a balance between their own opinions and the texts of others, their writing and comprehension of a scholarly discourse improves […]" (Angell & Tewell, 2017). This can also be described as making one's own voice heard and proving in the text that one has understood and is debating the issue at hand. In doing this academic confidence and consciousness is being built and assessing and selecting sources becomes easier.

Traditional source evaluation methods are making students take an authoritative stance to published and peer reviewed research and other sources. Sources are often understood as having a set value, where the highest ranked sources are peer-reviewed texts. However, a peer-reviewed article may not always be possible to obtain and furthermore, based on what the intention is for the given source, it may not even be the right choice. If one is studying current events, non-peer-reviewed newspaper articles may be more relevant.

A Norwegian study about Ph.D. candidates and their information behaviour (Gullbekk et al., 2013) state that the Ph.D. candidates seem to have a more mature understanding of sources in that they do not necessarily consider where the information is found, but rather if it adds to the discussion at hand. This is not surprising, as they have spent more time delving into their area and have had time to develop a deeper understanding. Gullbekk et al. (2013) further state that Ph.D. candidates view the peer reviewing process as a relevant measurement of quality. It is also seen as an insurance that the information has been assessed in terms of quality and relevance in current academic discussions. Lorenzen (2001, p. 159) points out that teachers often focus on the web as an untrustworthy source of information, while the library represents a location for good sources. Haider and Sundin (2019, p. 111) further emphasize that teachers do not see the students' abilities to search to be the main issue, but rather their lack of abilities when it comes to assessing the result list.

Conclusions and further research

This study highlights that there is room for improvement in the established approaches to teaching source criticism and source evaluation. The suggested supplement to the traditional teachings, the MIND model, offers a more reflective and self-assessing approach to a highly complex field. The traditional approaches are still needed, and they serve an important role as an introduction to critical thinking. The problem with these approaches seems to be that they focus more on only evaluating the sources at hand rather than engaging students in a reflective process of why they make the choices they do. Evaluating already peer reviewed articles can be challenging for unexperienced students, and perhaps a more self-assessing approach can help them develop their source evaluation into source consciousness. In encouraging a conscious and aware use of sources, it also brings the discussion of ethical use of sources up to date. Being aware of not only selection of sources, but how they are cited in order to not change the meaning of them is an important part of being source conscious.

Pinfield et al. (2020) describe the relationship between theory and practice as complex and even problematic as development of theory is highly valued in the research community, yet it can be off-putting to many practitioners. They further explain that "Practice is complex, not simply because

practitioners in professional contexts are busy and have responsibility for a wide range of activities, but also because those activities happen within complex social, cultural, and historical contexts" (Pinfield et al., 2020, p. 64), proving the importance of a socio-cultural approach to understand the complexity of navigating and truly understanding an information landscape, including both theory and practice. Pinfield et al. also point out that theory may be used implicitly by practitioners, without being aware of it (Pinfield, 2020, p. 68). This implies that theory can be an important vessel in making tacit knowledge from the field of practice explicit and transferrable to others, offering a possibility of a deeper understanding of the practice, and further development of theory based on experiences in the field of practice. This way of thinking about the interconnectedness of theory and practice has informed the development of the MIND model, and holds similarities to the spiral of development of organizational knowledge, as described by Dalkir where "The knowledge spiral is a continuous activity of knowledge flow, sharing, and conversion by individuals, communities, and the organization itself" (Dalkir, 2011, p. 70), if we replace the organization with academia.

Applying a sociocultural view on source evaluation cannot be taught through instruction alone. It needs to be experienced and developed through familiarity with the subject at hand in a relevant information landscape (Lloyd, 2006). It can be introduced and encouraged through instruction, but at the end of the day, the student or researcher must do the evaluation themselves and make a conscious choice of what sources to include in their work. Even though MIND is also a checklist, it differs in the way that it asks the author or student questions about themselves and their choices rather than reducing the field of source evaluation to a certain number of questions regarding the source and its value. Hopefully, MIND can help to facilitate a more holistic approach to source evaluation, although further research in applying MIND in library instruction is needed to get more data on how this will be perceived and applied by students.

References

Association of College and Research Libraries (2000). ACRL STANDARDS: Information Literacy Compentency Standards for Higher Education. College & Research Libraries News, 61(3), 207-215. doi:https://doi.org/10.5860/crln.61.3.207

Angell, K., & Tewell, E. (2017). Teaching and Un-Teaching Source Evaluation: Questioning Authority in Information Literacy Instruction. *Communications in Information Literacy*, *11*(1). https://doi.org/10.15760/comminfolit.2017.11.1.37

Bårnes, V. B., & Løkse, M. (2015). *Informasjonskompetanse: Håndbok i kildebruk og referanseteknikker* (2. utg., p. 128). Cappelen Damm akademisk.

Bartz, W. R. (2002). Teaching skepticism via the CRITIC acronym and the skeptical inquirer. *The Skeptical Inquirer*, *26*(5), 42-44.

Bird, N., McInerney, C., & Mohr, S. (2011). Source Evaluation and Information Literacy: Findings from a Study on Science Websites. *Communications in Information Literacy*, *4*(2). https://doi.org/10.15760/comminfolit.2011.4.2.95

Bobkowski, P. S., & Younger, K. (2020). *News Credibility: Adapting and Testing a Source Evaluation Assessment in Journalism | Bobkowski | College & Research Libraries*. https://doi.org/10.5860/crl.81.5.822

Brand-Gruwel, S., Kammerer, Y., Meeuwen, L. van, & Gog, T. van. (2017). Source evaluation of domain experts and novices during Web search. Journal of Computer Assisted Learning, 33(3), 234–251. https://doi.org/10.1111/jcal.12162

CCC Online Library. (2019, July 10). *Learn about Evaluating Sources: CRAP Test*. https://ccconline.libguides.com/c.php?g=242130&p=2185475

Consciousness. (n.d.). In *Cambridge Dictionary*. Consciousness. (2020). In *Encyclopædia Britannica*. https://www.britannica.com/topic/consciousness

Culumber, Z. W., Bautista-Hernández, C. E., Monks, S., Arias-Rodriguez, L., & Tobler, M. (2014). Variation in Melanism and Female Preference in Proximate but Ecologically Distinct Environments. Ethology, 120(11), 1090–1100. https://doi.org/10.1111/eth.12282

Daland, H. T. D. (2015). Just in case, just in time, or just don't bother? Assessment of one-shot library instruction with follow-up workshops. *LIBER Quarterly*, *24*(3). https://doi.org/10.18352/lq.9714

Daland, H. T. D. (2017). Teaching Source Criticism to Students in Higher Education: A Practical Approach. In D. Oberg & S. Ingvaldsen (Eds.), *Media and information literacy in higher education: Educating the educators* (pp. 89–105). Chandos Publishing.

Eriksson, L. T. (2020). *Kritisk tenkning* (1. utgave.). Gyldendal.

Ferguson, C. (2014, November 11). Overly honest references: "Should we cite the crappy Gabor paper here?" Retraction Watch. https://retractionwatch.com/2014/11/11/overly-honest-references-should-we-cite-the-crappy-gabor-paper-here/

Gudmundsdottir, D. G. B., & Hatlevik, O. E. (2020). "I just Google it"—Developing professional digital competence and preparing student teachers to exercise responsible ICT use. *Nordic Journal of Comparative and International Education (NJCIE)*, *4*(3), 39–55. https://doi.org/10.7577/njcie.3752

Gullbekk, E., Calvo, M. C. T., & Rullestad, T. (2013). *PhD candidates and the research process: The library's contribution*. Universitetsbiblioteket. https://www.ub.uio.no/om/forskning-publikasjoner/skrifter-ub/hefte08.pdf

Haider, J., & Sundin, O. (2019). Invisible search and online search engines: the ubiquity of search in everyday life. New York: Routledge.

Hicks, A., & Lloyd, A. (2016). It takes a community to build a framework: Information literacy within intercultural settings. Journal of Information Science, 42(3), 334–343. https://doi.org/10.1177/0165551516630219

Hicks, A., & Lloyd, A. (2021). Relegating expertise: The outward and inward positioning of librarians in information literacy education. Journal of Librarianship and Information Science, 09610006211020104. https://doi.org/10.1177/09610006211020104

List, A., & Alexander, P. A. (2018). Corroborating students' self-reports of source evaluation. *Behaviour & Information Technology*, 37(3), 198–216. https://doi.org/10.1080/0144929X.2018.1430849

Lorenzen, M. (2001). The land of confusion?: High school students and their use of the World Wide Web for research. *Research Strategies*, *18*(2), 151–163. https://doi.org/10.1016/S0734-3310(02)00074-5

Lloyd. (2006). Information literacy landscapes: an emerging picture. Journal of Documentation, 62(5), 570–583. https://doi.org/10.1108/00220410610688723

Lloyd, A. (2017). Information literacy and literacies of information: A mid-range theory and model. Journal of Information Literacy, 11(1), 91–105. https://doi.org/10.11645/11.1.2185

Mason, L., Scrimin, S., Tornatora, M. C., Suitner, C., & Moè, A. (2018). Internet source evaluation_ The role of implicit associations and psychophysiological self-regulation. *Computers & Education*, *119*, 59–75. https://doi.org/10.1016/j.compedu.2017.12.009

Matthies, B. S., & Helmke, J. (2005). Using the CRITIC acronym to teach information evaluation. *Librarian Scholarship*, 2.

Meriam Library California State University, Chico. (2010, September 17). *Evaluating Information – Applying the CRAAP Test*. https://library.csuchico.edu/sites/default/files/craap-test.pdf

Osborne, C. (2018). Programming to Promote Information Literacy in the Era of Fake News. International Journal of Legal Information, 46(2), 101-109. doi:10.1017/jli.2018.21

Pinfield, S., Wakeling, S., Bawden, D., & Robinson, L. (2020). Open access in theory and practice: The theory-practice relationship and openness (p. 256). Taylor & Francis.

Radom, R., & Gammons, R. W. (2014). Teaching Information Evaluation with the Five Ws. Reference & User Services Quarterly, 53(4), 334–347. https://doi.org/10.5860/rusq.53n4.334

Russo, A., Jankowski, A., Beene, S., & Townsend, L. (2019). Strategic source evaluation: Addressing the container conundrum. *Reference Services Review*, *47*(3), 294–313. https://doi.org/10.1108/RSR-04-2019-0024

Silva, E., Green, J., & Walker, C. (2018). Source evaluation behaviours of first-year university students. *Journal of Information Literacy*, *12*(2), 24–43. https://doi.org/10.11645/12.2.2512

Sinatra, G. M., & Lombardi, D. (2020). Evaluating sources of scientific evidence and claims in the post-truth era may require reappraising plausibility judgments. Educational Psychologist, 55(3), 120–131. Academic Search Complete.

Sundin, O., & Carlsson, H. (2016). Outsourcing trust to the information infrastructure in schools: How search engines order knowledge in education practices. Journal of Documentation, 72(6), 990-1007. doi:10.1108/JD-12-2015-0148

Wilson. P. (1983). Second-hand knowledge : an inquiry into cognitive authority. Greenwood Press.

Whitworth, A. (2009). *Information obesity*. Chandos Publishing.

Zins, C. (2000). Success, a structured search strategy: Rationale, principles, and implications. *Journal of the American Society for Information Science*, *51*(13), 1232–1247. https://doi.org/10.1002/1097-4571(2000)9999:9999<::AID-ASI1034>3.0.CO;2-2