Discourse and Writing/Rédactologie

DW/R Discourse and Writing/ Rédactologie

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Volume 32, 2022

URI : https://id.erudit.org/iderudit/1087985ar
DOI : https://doi.org/10.31468/dwr.917

Aller au sommaire du numéro

Éditeur(s)

Canadian Association for the Study of Discourse and Writing

ISSN

2563-7320 (numérique)

Découvrir la revue

Citer cet article

Vroom, J. (2022). Research Article Introductions as Hero Narratives: A Reading Strategy for Undergraduate Students. *Discourse and Writing/Rédactologie*, *32*, 48–58. https://doi.org/10.31468/dwr.917

Résumé de l'article

This article describes a strategy for teaching undergraduate students to read research articles (RAs)—called the hero narrative reading strategy. This strategy modifies an existing approach to reading RAs (the Scientific Argumentation Model [SAM]), which teaches students to identify an article's rhetorical moves. The hero narrative reading strategy relabels the rhetorical moves that the SAM identifies in RA introductions (Motive and Objective), and it frames RA introductions as hero narratives; students are taught to see RA writers as making hero claims—claims that they are stepping up to address a critical problem that previous research has not adequately addressed. This strategy can help students to understand the rhetorical structure of RAs.

Discourse and Writing/Rédactologie
Volume 32, 2022
http://journals.sfu.ca/dwr

Article

Research Article Introductions as Hero Narratives: A Reading Strategy for Undergraduate Students

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Abstract

This article describes a strategy for teaching undergraduate students to read research articles called the hero narrative reading strategy. This strategy modifies an existing approach to reading research articles (the Scientific Argumentation Model [SAM]), which teaches students to identify an article's rhetorical moves. The hero narrative reading strategy relabels two of the rhetorical moves that the SAM identifies in article introductions (*Motive* and *Objective*), and it frames the introductions as hero narratives; students are taught to see research article writers as making hero claims—claims that they are stepping up to address a critical problem that previous research has not adequately addressed. This strategy can help students to understand the rhetorical structure of research articles.

Introduction

It is essential for undergraduate students to be able to read and understand empirical research articles in order to succeed in many disciplines. Nevertheless, students struggle with understanding the argumentative (as opposed to the informational) dimension of these texts (Gillen, 2006). For example, Jamieson and Howard's (2013) research on students' use of sources has found that when reading research sources students tend to simply look for isolated sentences that they can paraphrase or quote from the first two pages of a source—a problem they call "sentence-mining." Kocatepe (2021) has confirmed that this is how many students read in a recent study that examined student's research practices. The students in her study approached their research sources as if they were bland repositories of static information, rather than dynamic records of socially constructed

knowledge. Similarly, Lennox et al. (2020) found that students focus on the surface/textual features of research articles, and struggle to grasp how the various pieces fit together. These studies suggest that, when it comes to reading research articles, students often struggle with understanding their rhetorical contours.

A range of techniques have been proposed for teaching students how to read these texts (e.g., Marver & Doperalski, 2019; Liao, 2017; Hoskins et al., 2012). One productive approach, which focuses on their rhetorical structure, is to teach students to recognize some of the conventions of the genre, particularly the rhetorical moves that occur in most research articles (e.g., Swales, 1990). For example, Van Lacum et al. (2014) developed an approach to teaching students how to read research articles in the sciences that they call the Scientific Argumentation Model (SAM). This strategy, which has been shown to be effective (Lammers et al., 2019; Van Lacum et al., 2014), teaches students to identify specific rhetorical moves that occur in research articles that follow the IMRD (Introduction, Methods, Results, and Discussion) structure.

The purpose of this writing in practice article is to present a strategy for teaching students to read articles, which modifies the SAM by relabelling two of the rhetorical moves that it identifies in article introductions. Specifically, this reading strategy frames research article introductions as hero narratives; students are taught to see writers as making hero claims—claims that they are stepping up to address a critical problem that previous research has not adequately addressed. I will first describe the SAM reading strategy. Following this, I will describe the hero narrative approach to article introductions. Finally, I will explain where this idea comes from, and conclude with some reflections on the benefits of this reading strategy.

The Scientific Argumentation Model

In developing the SAM, Van Lacum et al. (2014) drew from previous genre analyses of research articles. They synthesized research on the rhetorical moves that occur in the main sections of IMRD research articles and identified seven key moves that encapsulate an article's argument:

1. Motive (the research gap)
2. Objective (the research question or purpose statement)
3. Main Conclusion (the answer to the research question)
4. Implication (statements about the significance of the research)
5. Support (statements that justify the Main Conclusion—e.g., data and research sources)
6. Counterargument (limitations of the research)

7. Refutation (responses to the limitations)

The first two of these moves, *Motive* and *Objective,* occur in article introductions, and they encapsulate two of the three main rhetorical moves from Swales' CARS (Create a Research Space) analysis of research article introductions. According to Swales' (1990) influential analysis, article introductions typically follow a pattern that involves three rhetorical moves: 1) Establishing a territory—where writers identify an active conversation in the scholarly literature; 2) Establishing a niche, where they identify a gap in current research; and 3) Occupying the niche, where they state their purpose. The SAM's first move, *Motive*, corresponds to Swales' second move—establishing a niche. This move often contains a problem statement, where writers identify a gap in existing research. SAM's second move, *Objective*, corresponds to Swales' third move—occupying the niche. This move often takes the form of an explicit purpose statement (e.g., "the aim of this research is…"), but it can also take the form of a research question or a hypothesis.

These two moves (*Motive* and *Objective*) are perhaps the most important for the SAM, because they identify the main goal or purpose of a research article; the *Motive* sets up the *Objective*, and together they justify the research. For example, in a recent article that examines COVID-19 in asymptomatic patients, the *Motive* is signaled by the following:

> [D]ue to the rapid increase in the number of patients, treatment and research have been focussed on severe patients, and **studies on** mild or asymptomatic patients **have been insufficient** (Kim, Hwang and Kwak, 2020 p. 1).

This *Motive* statement is followed by the *Objective*, which takes the form of an explicit statement of what they sought to find out:

> **Therefore**, in a cohort of patients with mild or no symptoms at an isolation facility, **we evaluated** the proportion of patients with prolonged (>3 weeks) SARS-CoV-2 RT-PCR positivity. **Additionally, we analysed** the rate at which negative RTPCR results reversed to positive or indeterminate results (p. 1)

These *Motive* and *Objective* moves are important, because they provide the reader with the main purpose of a research article, which is essential for understanding the rest of the article. Below, I will suggest that these moves can be reframed as a hero narrative, where writers present themselves as heroes who are stepping up to address a critically important yet overlooked area of previous research.

The third and fourth rhetorical moves in the SAM typically occur in an article's Discussion section: *Main Conclusion* and *Implication*. The *Main Conclusion* is the response to an article's *Objective*. If the

Objective was presented as a research question, then the *Main Conclusion* provides the answer to that question. The *Implication* move, by contrast, pushes beyond the details of the *Main Conclusion* and makes statements about the real-world significance of the findings. For example, in the article on asymptomatic COVID-19 patients, the *Main Conclusion* is,

> SARS-CoV-2 was still detected more than three weeks after diagnosis in about a quarter of mild or asymptomatic COVID-19 patients. And, more than 40 per cent of upper respiratory RT-PCR test results were reversed from negative to positive or indeterminate within three. (p. 6)

The *Implication* move pans out from the details of the *Main Conclusion* and reflects on the real-world significance of the findings:

> Given these two findings, quarantine standards and testing methods currently in use may not be able to screen large numbers of COVID-19 patients. If the virus remains infectious during a period of detection, reconsideration of quarantine periods and screening methods may be necessary. (p. 6)

These moves (*Main Conclusion* and *Implication*) come in direct response to the *Motive* and *Objective* moves; they give an answer to the important question that was raised in the introduction. Together, the first four moves of the SAM form the core an of an article's argument.

The remaining three moves from the SAM (*Support*, *Counterargument*, and *Refutation*) are less essential for understanding the main takeaways from a research article, though they are certainly an important part of an article's argument. The *Support* move, which comprises a significant portion of an article, refers to the writers' use of sources to back up points they make, and it refers to the data/results writers generate from their research, which back up their conclusions. The *Counterargument* refers to the limitations statements that occur in Discussion sections, and the *Refutation* is the writers' response to the limitation (e.g., "One limitation of this study is X. Nevertheless, the findings are important because Y"). While there is no doubt that the *Support*, *Counterargument*, and *Refutation* are important moves, the core argument of the SAM happens in the first four moves.

The SAM model, in essence, teaches students to recognize and identify these seven rhetorical moves. They are taught about the purpose of each move, and they are shown authentic samples of the moves from empirical research articles. To measure the effectiveness of the SAM, students can be instructed to identify all seven moves in a given article.

The SAM has been evaluated in two studies and found to be effective. In the first study, Van Lacum et al., (2014) found that students' ability to identify the *Motive*, *Objective*, *Main Conclusion*, and

Implication moves improved after they implemented the SAM (the other three moves saw no change). In the second study, Lammers et al., (2019) found that students showed improvement in their ability to identify the *Objective*, *Supports*, and *Main Conclusion* (the change in the other four moves was less noticeable). What is more, they looked beyond the reading benefits of the SAM and determined that the genre consciousness that the SAM promotes is helpful for writing a synthesis of two articles. Thus, the SAM is helpful for both reading and writing skills development.

The Hero Narrative Reading Strategy

Although the SAM is an effective tool for teaching students to read empirical research articles, I suggest that a relabelling of their *Motive* and *Objective* moves can make the rhetorical structure of articles even more apparent to undergraduate readers. Specifically, I suggest that these two moves can be presented in one simple and easily accessible concept: what Karen Kelsky (2015) calls a "hero narrative" (p. 338). This strategy, therefore, is a slight modification to a teaching strategy that has been shown to be effective for improving students' awareness of research articles' rhetorical features.

When I teach the hero narrative reading strategy (for a demonstration, see Vroom, 2021), I give students excerpts of research articles where the *Motive* (or problem statement) and *Objective* moves are highlighted, and I ask them to discuss why the writers say those things. Below is an example paragraph from an article on asymptomatic COVID-19 testing:

> There have been many debates regarding optimal testing strategies for the general public and for HCWs [healthcare workers] specifically. Some experts promote mass testing of all HCWs to reduce occupational spread from atypical, mild, or asymptomatic cases, and to enable ongoing surveillance to protect the health care workforce over time (14). Others argue that the harms outweigh the benefits, particularly with laboratory testing constraints (15). **Limited studies, however, have examined** the results of HCW testing strategies that include asymptomatic persons. In one study in a large, London-based National Health Service trust, serial testing of a sample of 400 asymptomatic HCWs revealed positive tests between 7.1% and 1.1% of staff in consecutive weeks on the downslope of the epidemic curve (16). Another UK study found a 3.0% positivity rate among asymptomatic HCWs (17). **To our knowledge, no studies have reported** uptake of testing and disease occurrence among asymptomatic HCWs in Canada. **To fill this gap, this article examines** a voluntary mass asymptomatic testing campaign for all HCWs at one of Canada's largest community hospitals (Reid et al., 2020 p. 246).

The discussion about the highlighted text typically leads to conversations about how the writers are trying to justify their research or demonstrate the necessity of the research, or how their research is novel or different from previous research.

Following this discussion, I explain that the writers are presenting themselves as heroes who are stepping up to address a critically important issue that has not been adequately addressed in previous research. In the case of the above excerpt, I say things like: "No research has examined positivity rates of mass asymptomatic testing campaigns in Canada. We really need to know this, so that we can know if mass asymptomatic testing is an effective strategy for pandemic management! Who will rescue us from the terrible predicament? Answer: Reid, Rosella, Milijasevic, and Small. They have answered the call and stepped up as the heroes who will address this critically important issue!"

Following this mini-lesson on the purpose of hero narratives, I present students with a series of excerpts from research article introductions with no highlighting, and I ask students to identify the words that signal the hero narrative. After the students become familiar with the language writers to use signal their *Motive* and *Objective* moves (i.e., their hero narratives), I either give students a whole article and ask them to find the hero narrative in the Introduction, or I ask students to find the hero narrative in an article of their choosing. Then, after students share and discuss the hero narratives they found, I ask them to try to explain what they think is the main purpose of the article.

In my experience, students respond well to the hero narrative reading strategy. The idea that article writers are making hero claims resonates with many of them, because it humanizes texts that they typically view as potentially dry, impersonal, boring, and technical. I recognize that it may seem like an overly dramatic way of describing research articles, but it helps students see these texts as something more than a bland repository of information. As noted by Kocatepe (2021), students are often taught to simply read for information-purposes, and this may explain why, when researching, they often mine their sources for isolated sentences that they can quote or paraphrase (Jamieson & Howard, 2013). They treat an article as if it is a one-dimensional information dump—a repository of facts and statistics, similar to how Ann Johns (2002) describes her students' approach to reading: "My students see texts they read . . . as autonomous, uncontested and unnegotiated, unencumbered by the values and oppositions that they may freely recognize in their out-of-school lives and textual experiences" (pp. 239-240). The hero narrative reading strategy teaches students to look for the drama, the plot, the storyline that an article's authors are crafting. It helps them recognize that research articles are fundamentally rhetorical and argumentative—part of the ongoing conversations that take place within academic discourse communities. While rhetorical moves like

Motive and *Objective* also teach students to see articles' argumentative contours, the hero narrative helps to make these all the more apparent.

What is more, the hero narrative reading strategy can be easily connected to the *Main Conclusion* and *Implication* moves that occur in the Discussion section of an article. If the hero narrative is understood as a writers' claim that they are stepping up to address an important yet inadequately explored issue, then the *Main Conclusion* and *Implications* can be understood as the writers' attempt to meet that need or solve that problem; they are the conclusion or resolution to the drama introduced with their hero narrative. In the above example of the article that examines an asymptomatic COVID-19 testing campaign, the authors' *Main Conclusion* is,

> During the asymptomatic testing campaign, 0.2% (5/2,751) individuals tested positive for COVID-19 (p. 248).

Their implication is,

> In contexts such as this in which community prevalence is declining and adequate PPE and other infection control practices are in place, health care decision makers should question the value of mass asymptomatic institutional testing campaigns (p. 248).

When the *Motive* and *Objective* moves are understood as a hero narrative, it primes the reader for the main takeaways from the research: the *Main Conclusion* and *Implication*(*s*). In this case the authors are essentially saying: "We really need to know if mass asymptomatic testing is a good idea, so we did a mass asymptomatic testing campaign at a hospital to see if it's worth it." This sets up the drama of the article—it's plot—which primes the reader for the main takeaways: "We found that the positivity rate is really low, which suggests that it is probably a waste of time and resources. Now we know!" Thus, framing the *Motive* and *Objective* moves as a hero narrative can help to make the rhetorical and argumentative dimension of the article all the more apparent.

The Hero Narrative and Kelsky's Grant Proposal Template

It must be noted that although I am introducing a new means of teaching students how to read and understand research article introductions, I did not invent the idea of viewing novel research ideas as hero narratives. I first began to see article introductions as hero narratives when I was in graduate school, and a fellow student told me about Karen Kelsky's approach to grant proposals (Kelsky, 2015). Kelsky, who is a consultant for graduate students and early-career academics, developed what she calls "the foolproof grant proposal template." The core of this template is a "hero narrative." Kelsky instructs graduate students to begin a grant proposal with one or two paragraphs that give an

overview of research in some field, which should be followed with two statements that set up the hero narrative:

1) A "however" statement that identifies a gap in the literature—e.g., However, despite this helpful research on X, little attention has been paid to Y.
2) An "urgency" statement that suggests this gap is problematic and requires immediate attention.

These two statements are followed by a purpose statement, which is the heart of the hero narrative,

3) I am going to address this overlooked yet critical problem by doing so-and-so.

A light went on for me when I was introduced to Kelsky's hero narrative. I realized that the hero narrative does not only apply to grant proposals. In fact, it closely aligns with Swales' CARS model for research article introductions. As a result, this hero narrative concept changed how I approached my own dissertation and other research projects. And, more importantly, I began to see hero narratives in articles that I was reading, and I began to use the hero narrative as a means of quickly identifying and understanding the main purpose of an article. It was only natural that I would teach students this strategy—even before learning about the SAM.

Conclusion

Jamiesone and Howard's (2013) research shows that, when researching, many students simply mine their sources for citable sentences. This suggests that students often treat research articles (or any other research source) as a wall of sentences that each have the same purpose: to convey information. This reading tendency is confirmed by Kocatepe (2021). The students in her study treated research sources as static repositories of information, and they approached their sources as if they simply had to find that information. Furthermore, her students viewed this information "as an already-existing, discoverable entity" (p. 12) that just had to be identified and extracted. These findings demonstrate that many students lack the critical reading skills necessary for research and for engaging with their disciplines' discourses. Teaching students to understand research articles' rhetorical moves may be key to addressing this problem, and the SAM is certainly a step in the right direction. Lammers et al. (2019) even found that the SAM helps students beyond just reading; the students in their study improved in their ability to critically engage with research articles in their writing as well.

Having taught the hero narrative reading strategy for two years in a variety of contexts, I have found it to be helpful for getting students to understand this rhetorical and argumentative dimension of research articles and to see them as something more than a wall of sentences that simply convey facts and information. This, however, is based on my classroom experience. The efficacy of the strategy remains to be empirically tested, and there are a number of factors that need to be addressed. For example, there may be differences in the strategy's efficacy for English language learners versus students with English as a first language. Additionally, not all research articles have an explicit problem statement, and some articles' problem statements are more explicit than others, which could leave students confused as to how to read articles that don't follow the mold. There may also be disciplinary variation on the use of problem statements, so it is unlikely that the strategy would work for all articles in all disciplines.

Nevertheless, I would suggest that teaching students the hero narrative reading strategy is worthwhile. It is relatively simple to teach and demonstrate in class, without giving up much classroom time. Yet it has the potential to help many students in many fields recognize and understand the rhetorical structure of research articles, which is essential for their success.

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