

Integrating Debiasing Strategies to Facilitate Improved Critical Thinking in Language Learning Contexts

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ABSTRACT

Since the 1970s, scholars from a variety of disciplines have identified numerous cognitive biases and examined how they can impede rational decision-making. Despite the overwhelming evidence from these empirical studies, critical thinking pedagogy has largely ignored this body of work. This paper maintains that critical thinking instruction needs to adopt a new framework, one that considers the importance of cognitive biases. This paper first explains how cognitive bias can surface and negatively impact tasks that typically occur in language learning contexts, and secondly, it aims to describe several debiasing strategies and interventions to equip language teachers with the tools to facilitate a framework that encourages students to critically question ideas and sources, seek diversity of opinion, and slow the thinking process. Current literature on cognitive bias and debiasing is reviewed, followed by an explanation of how teachers can integrate strategies in two common language learning tasks.

INTRODUCTION

Critical thinking is hailed as a key 21st-century skill, a core competence needed by graduates in an era of globalization. Despite its importance, various studies have found that Asian countries are generally weak in critical thinking compared to Western cultures (Atkinson, 2007; Turner, 2006). Many see this as the result of institutional and sociocultural factors, such as an emphasis on rote learning for exam preparation, a tendency toward teacher-centered lessons, and an authority-reverent culture (Watkins & Biggs, 2001; Ramos, 2014). Recently, however, many

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Asian countries, such as Japan, South Korea, and Nepal, have introduced a variety of activities and materials to foster critical thinking skills across their curriculum (Law & Miura, 2015).

The overall aim of emphasizing critical thinking in courses is to teach students to think in a clear, rational, and open-minded manner; to foster practical reasoning skills of mitigating or forestalling the effects of bias and flawed reasoning. While it has been argued that the necessary skill sets for critical thinking are teachable (Halpern, 1998), more research studies have generally concluded that explicitly teaching students about biases is not an effective instructional strategy.

Following a brief literature review, this paper discusses some of the most significant biases that hinder performance in language learning tasks and hamper the practice and development of critical thinking. Subsequently, some debiasing techniques and interventions will be reviewed. The paper seeks to add to the growing body of knowledge by examining two examples of how cognitive bias impedes effective decision-making and offers a framework for teachers to implement debiasing strategies and interventions. The debiasing strategies and interventions suggested in this paper demonstrate a move away from a traditional approach of critical thinking instruction to a more informed and meaningful approach that considers the role of cognitive bias.

LITERATURE REVIEW

What are cognitive biases?

The term ‘cognitive bias’ was introduced in the 1970s to describe people’s systematic deviation from rationality in judgment or decision-making. Cognitive biases arise because human cognition has a limited capacity to properly organize and process all the information available (Kruglanski & Ajzen, 1983). As a result, people rely on heuristics or coping mechanisms such as intuition to implicitly direct their decisions and judgments. While these processes are generally helpful in allowing people to make decisions quickly, they do sometimes result in serious errors. Heuer (2007) indicates that having an awareness of a bias does not alone produce a more accurate perception. Therefore, cognitive biases are extremely difficult to overcome.

To date, researchers have identified more than a hundred cognitive biases. In fact, Benson (2016) has created a Codex which includes about 180 such biases that can be categorized into four main groups. These groups include too much information, not enough meaning, a need to act fast, and what should we remember? Understanding which cognitive biases are involved and how they might play a part in searching, retrieving, interpreting, evaluating, and applying information can reveal how learners make decisions and choices. While cognitive biases have been researched in a wide range of fields, including economics (Thaler & Sunstein, 2009) and medicine (Groopman, 2008), less is known about their impact in educational and language learning contexts.

Does teaching help?

Critical thinking instruction can be quite comprehensive in its approach, but many courses and textbooks emphasize similar core elements such as logic, argumentation, fallacies, and rhetoric (Beaulac & Kenyon, 2018). Cognitive biases have recently been given some attention in critical thinking materials and textbooks (Kenyon, 2008) after years of being ignored by the critical thinking community (Battersby & Bailin, 2013). The materials often present names, taxonomies, and definitions of some of the more prevalent cognitive biases. The overall purpose of explicitly teaching critical thinking and cognitive bias is to enable students to identify fallacious and biased reasoning when encountered and to mitigate these errors in their own thinking. However, the practice of merely teaching students facts about biases is not as effective as previously thought. Overall, the literature on the cognitive and social psychology of debiasing indicates that teaching people about biases does not reliably debias them. In fact, Kenyon and Beaulac (2014) assert that for most biases, “practically *any* debiasing strategy intended to be learned and subsequently self-deployed by individuals, acting alone and at the point of making a judgment, is unlikely to succeed in significantly minimizing biases” (p. 343).

Where Do Cognitive Biases Appear?

In language learning contexts, particularly in tertiary environments which involve more social interaction and more emphasis on thinking processes, cognitive biases are pervasive. When students are analyzing reading material, searching for evidence for arguments, giving feedback on a classmate’s work, or making revisions, cognitive biases will likely have an impact on the outcome of a task or assignment. In the next section, a more detailed description is provided of some cognitive biases that are specifically of relevance to teachers who implement discussion activities and essay writing.

Example 1: Small group discussions

A common activity assigned by teachers in language learning contexts is to have students discuss issues in small groups. Group discussion is a valuable pedagogical tool because it promotes communication in the target language. Asking students to work in groups to discuss has other benefits, which include consensus building and problem-solving. An example of a typical discussion prompt is described below:

In groups of four or five students, consider several problems of living in big cities and discuss how these problems can be solved.

However, problems can emerge in this seemingly straightforward task; for example, one or two students dominate the discussion, the range of opinions is limited, the discussion lacks depth and finishes early, or group members do little to challenge each other’s ideas. Many of these issues could be the outcome of cognitive biases.

In discussion tasks, a group of social biases including groupthink, the halo effect, the authority bias, and polarization typically emerge that can thwart overall group performance. Janis

(1972) defined *groupthink* as “a mode of thinking that people engage in when they are deeply involved in a cohesive in-group, when the members’ strivings for unanimity override their motivation to realistically appraise alternative courses of action” (p. 9). This indicates that groups can make less effective choices because they become worried about reaching a decision that preserves harmony or group norms by offering relatively conservative viewpoints (Janis, 1982; Packer, 2009). Another socially-oriented cognitive bias is known as the *halo effect* (Nisbett & Wilson, 1977; Bak, 2010). This bias is where a positive impression of a person influences how that person and their opinions are viewed and evaluated. For example, if someone is viewed as very intelligent and resourceful, then their opinion could be given more attention and weight than it deserves. The *authority bias* (Milgram, 1963; Cialdini, 2007) is a social bias in which people often attribute greater importance and weight to the words and decisions of an authority figure. In the classroom, the authority bias can emerge when teachers assign a student to be a leader or when a class member has significantly stronger communicative skills. As a result, these students become figures of power. *Polarization* occurs when group members revise or weaken their initial views to follow the majority view, thus leading to the group’s adoption of more extreme views (Brauer, Judd & Gliner, 2006; Zhu, 2013). Kogan and Wallach (1967) suggest that polarization is created in groups because there can be a weakening of individual responsibility in group-based decisions. That is, individuals can make riskier decisions because if a poor choice is made, then blame can be shared among the group members.

Due to the influence of these biases, group members may either decide to simply agree with one of the opinions without voicing their own ideas, water down their own opinions to move closer to the average or dominant position, or pretend to agree while inwardly disagreeing without voicing their opinion.

Example 2: Researching essay topics

Another example of how biases can emerge can be seen in writing an argumentative essay. In this context, cognitive biases can impact the first step in the writing process: choosing an essay topic. Below is a typical writing prompt in an academic writing course:

Write a five-paragraph essay on whether animal testing should be legal or not.

Common issues can arise even in the first stage of writing; choosing an essay topic. For instance, students may decide on a position too quickly and later regret it, or they realize too late that the opposing side is stronger. Problems also appear when researching. Beliefs about the topic can be shaped by what websites are initially viewed, and opposing viewpoints may not be researched and refuted. As in the discussion context discussed earlier, there are several prevalent biases that typically surface when making decisions and gathering information that impedes optimal decision-making.

One potential problem is called the *sunk cost fallacy*. The sunk-cost fallacy refers to the tendency to continue an unsuccessful venture after an investment in money, effort, or time has been made (Arkes & Blumer, 1985). It is a common error that people tend to make to justify earlier investments. In terms of choosing an essay topic, writers may pursue their initial choice despite finding convincing arguments and evidence that supports an alternative view. Changing a

topic after hours of research would be perceived as a waste of time and effort. Another bias that can influence the writer's choice is called *order-effect bias* which means that the relative position of an item in an inventory of stimuli may uniquely influence how a respondent reacts to the item. In a study by Serenko and Bontis (2013), respondents consistently rated journals that appear at the beginning of the ranking list higher than journals at the end of the list. Perreault (1975) notes that "the early items act as an "anchor" upon which subsequent responses are made" (p. 544). This bias is relevant to writers when searching for research articles in the library or on the Internet. Articles that appear first on the list hold more weight than those that are not, which impacts which articles are accessed and how the topic is perceived. The order of publications may prevent a writer from adopting a more balanced view. A final bias to consider is called the *myside bias*, which can be viewed as a subclass of *confirmation bias*. Myside bias is being intolerant toward information supporting another side of an argument, and it has been demonstrated in numerous empirical studies over the last two decades (Taber & Lodge, 2006; Wolfe & Britt, 2008). Simply put, people's prior beliefs and attitudes shape how they evaluate evidence and test hypotheses. This is a considerable cognitive difficulty because critical thinking skills depend on the ability to disassociate prior beliefs and opinions from evaluating evidence and arguments.

The uncovering and examination of these biases have led to new windows of thought that offer direction for how teachers can manage and practice small group discussion and writing processes more effectively. As the research suggests, it is better to put a framework in place to counter the possibility of these biases negatively impacting the learning outcomes. These frameworks and strategies need to be integrated because learners have difficulties recognizing their own biases. Thus, if preventative strategies are in play before a bias even appears, then the less likely it is that a bias would impact the decision-making process. Some strategies or interventions will be discussed to help teachers address the common effects of the more common biases, which will improve the quality of their student's performance and critical thinking.

DEBIASING STRATEGIES AND INTERVENTIONS

Anonymous Individual Brainstorming

The optimal course of action is to have a framework to prevent these potential problems from emerging. To do this, teachers could ask students to write down their opinions for homework before a discussion takes place or an essay topic is chosen. Students should have ample time to reflect and note down ideas and arguments. In class, all of the ideas would be gathered by the teacher, added to a document, and given to groups to be discussed. This provision would ensure that all ideas and perspectives would be considered and that certain viewpoints would not be lost. Group members would be less likely to withhold their opinions due to anxiety or hesitation of contradicting an authoritative or popular person, or to a desire to maintain the harmony of the group, or simply that the argument seems so different that the student does not present it to the group. The collection of ideas is shared and presented anonymously; therefore, no one student is at risk of feeling personal discomfort. In the case of choosing an essay, having

students discuss the issue would encourage them to consider alternative viewpoints before taking a stance.

Red Teams

Teachers can use *Red Teams* to encourage diverse viewpoints. Red Teams are individuals or groups within the group who have been chosen to challenge, or criticize a plan or proposal (Sunstein & Hastie, 2015). In discussion groups, Red Teams can be one or two students whose role it is to challenge or question the various opinions or ideas that come up. Red Teams can be an effective tactic to mitigate the authority bias, halo effect, and groupthink bias by setting up a framework that requires objections. There are two main advantages of assigning such a role. One is that any potential bias can be countered before it emerges. Disagreement often leads to divisions within the group because it is seen as a complaint or personal attack. However, if group members are assigned to challenge the group's ideas and opinions, then the disagreement is seen as a role to be fulfilled instead of a personal attack. This kind of exercise works to center the discussion more on the ideas rather than the person. In writing courses, having students discuss and challenge ideas early in the process allows learners to confront alternative perspectives, which encourages a more balanced view of the issue.

Teacher Intervention for Perspective-taking

Teacher interventions are sometimes needed to give the flow of argument time to reset. One of the most effective ways to do this is by adding some perspective-taking tasks (Sunstein & Hastie, 2015). A teacher intervention could be used at any time in the class; however, it is potentially more effective in the later stages of the discussion or search process. At this point, the teacher will halt the task and suggest some random perspectives to discuss or research. For example, if a class is discussing the ethics of parental sex-selection of babies, group members could be assigned roles, e.g. a mother, a baby, a politician, or a company. Each group member's objective is to look at and discuss the issue from the perspective of the assigned role and then share their thoughts with the group. The intervention can foster a new direction or perspective which can prevent the emergence of unhealthy polarization.

Silencing the Leader

Another strategy would be to assign a leader and outline a procedure for them to follow in discouraging strong personalities from dominating the discussion. For instance, a group leader can be asked to withhold their opinion at the start of an activity. With a "silenced leader," other opinions have a greater opportunity to be expressed. One approach would be to break the groups into pairs to generate ideas. Then members would go back to the larger groups to discuss their ideas. Certain people can also be silenced from giving an opinion until the activity reaches a particular stage in the discussion. These types of interventions placed within the procedure increase the likelihood for students to acquire a more balanced perspective and integrate debiasing routines.

Target Families of Biases

It is very difficult to aim at countering one particular bias when considering this in a classroom situation. This is because working out what specific cognitive bias is affecting which individual and is affecting the task in what way means trying to account for a huge range of quickly changing variables.

However, one method to effectively prevent or mitigate biases is to target *families of biases* (Beaulac & Kenyon, 2018). For example, the authority bias, halo effect, and groupthink biases can be grouped in a family of biases because they are social biases that lead to a narrow point of view and range of perspective. When learners are being influenced by these biases, many arguments are simply not expressed to maintain group harmony (groupthink), to support a “popular” group member (the halo effect), or to show respect for a person’s perceived position of power (the authority bias). Thus, if this family of three biases has a common negative outcome, then a framework or strategy can be implemented to increase and expand the range of ideas and perspectives.

CONCLUSION

This paper has attempted to explore some ideas for how second language instructors can mitigate the harmful impact of cognitive bias in language learning contexts. Classroom approaches applying new research findings concerning cognitive bias and debiasing offer opportunities for new discoveries about how to further ensure and improve the effectiveness and quality of promoting and developing critical thinking skills. As many countries in Asia are promoting critical thinking to address the challenges of the 21st Century, integrating strategies and interventions, such as the ones described in this paper, can lead to greater improvement in language learning and promote greater diversity and open-mindedness.

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