Towards a model for analyzing and supporting business reasoning in secondary education

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The importance of business reasoning in business education

Reasoning is considered an important skill which has been researched thoroughly in many secondary school subjects, including geography (e.g., Hooghuis, Van der Schee, Van der Velde, Imants & Volman, 2014), history (e.g., Van Boxtel & Van Drie, 2018) and economics (e.g., Grol, De Vries & Sent, 2016). In business education, however, the process of reasoning and its underpinning knowledge seems to have attracted less academic interest so far. In fact, much about our subject is less researched than in other subjects with bigger teacher communities and which are taught across more year groups. As business teachers and teacher educators, we think this may be problematic because it means that teachers rely on anecdotal or local approaches to understanding and teaching our subject, rather than having access to shared language and models that can help to support and develop practice across our community.

In England, specifications for the study of business identify skills to be studied alongside subject content. AS and A level educational standards address the importance of students gaining "an holistic understanding of business in a range of contexts" by acquiring "a range of relevant business and generic skills, including decision making, problem solving, the challenging of assumptions, and critical analysis" (DfE, 2014, p.1). At GCSE level students are challenged "to apply their knowledge and understanding to business decision making. This includes the interdependent nature of business activity and how different business contexts affect business decisions" (DfE, 2015, p.4). Similar aspects are present in the standards for business in secondary education in the Netherlands, where two of us are based. Dutch students should, amongst other things, be able to resolve a problem in a business context by using business thinking and business decision making skills, whilst considering the interests of the stakeholders involved. During this process, students should apply business methods, use business concepts and calculations, and analyse business relationships (Examenblad, 2018a; Examenblad, 2018b; Examenblad, 2019). From the national standards in both England and the Netherlands it is clear that students should be able to use their business knowledge to demonstrate high quality decision-making in relation to business problems. High quality decision-making relies on sound reasoning.

We have observed that a clear definition of what constitutes reasoning in business is absent from these national standards. Moreover, commonly available resources and textbooks either don't model clearly how to reason, or it is reduced to mechanistic, exam-oriented steps by acronyms such as 'the three W's[1]' or PECAN PIE[2], a strategy aimed at helping students to answer exam questions to the full. While these can help with the structure of a written answer, they do not, in themselves, develop sound underpinning business reasoning. Little research-informed guidance seems available to assist teachers and students with how to reason well within the school subject of business.

Our work on business reasoning

To address this gap, the four of us drew on our personal expertise as teachers and teacher educators of business education. With reference to the subject guidance documentation discussed above and in discussion with colleagues in the field of business education on several occasions, including an international conference in the domains of economics and business in Denmark in 2018, we developed the following definition of business reasoning:

> *a disposition to think analytically and evaluatively about the actions of, and interactions between, individuals and organizations in business environments using business knowledge, and to make justified recommendations for and/or decisions about future action that draw from this thinking.*

We think this definition is helpful because it includes the 'objects of study' for business education (individuals and organisations in business environments), the knowledge base that is used (business knowledge), the ways of thinking (analytically and evaluatively) and the purposes of this thinking (to make recommendations and reach business decisions for future action). These can be contrasted with elements of reasoning in other subjects to help us as teachers, and our students, to understand what high quality reasoning is *in our subject of business education*.

[1] Which option? Why this option? Why is this better than another option?

[2] Point Explained, Contextualized ANalysis, Point Included Evaluation.

We think this definition may be especially helpful when students are engaged in working with business cases. Cases are common teaching materials for business education and underpin much assessment in our subject. Business cases can be considered authentic though simulated business contexts that are used, for example, to offer students real-world business situations from which they can identify possible business challenges, analyse possible causes, and consider potential actions that can be taken (cf. Harvard, ND; Elvira, 2016). In this way, business cases can provide students with an opportunity to practise their reasoning skills. Business reasoning is underpinned by business knowledge. In other words, when working on a case students use their business knowledge (comprising concepts, procedures and contexts) coupled with a subject-specific approach to reasoning, to make sense of what is going on and to determine a suitable course of action to follow in that specific case. For example, a cost/benefit calculation (the knowledge) can be used by students to advise a manager whether or not to get an extra loan for expanding production capacity given a particular context (the reasoning). Context includes the characteristics of the specific business, its environment, and its stakeholders (cf. Blommaert & Blommaert, 2016; Vernooij & Van de Aa, 2003).

Based on our joint thinking, we designed some research into reasoning where we asked experienced business teachers to 'think aloud' as they worked with a business case and some sample questions. We listened to how they reasoned and captured common themes in their approaches. From this, we developed a tentative model of business reasoning in which the process is deconstructed into four distinct yet connected steps. We conceptualized the complex process of business reasoning as a sequence of steps during which (1) a business and its wider environment are analysed, (2) the specific situation the business faces is discussed, (3) alternative courses of action in response to the situation are elaborated upon, and (4) an action is recommended and justified. All stages of reasoning are underpinned by the use of business knowledge. Business knowledge comprises *concepts* (e.g., price elasticity of demand), *procedures* (e.g. how to construct a cash flow forecast), and *contexts* (e.g., the different settings in which business activities occur). An illustration of this model is presented in Figure 1.

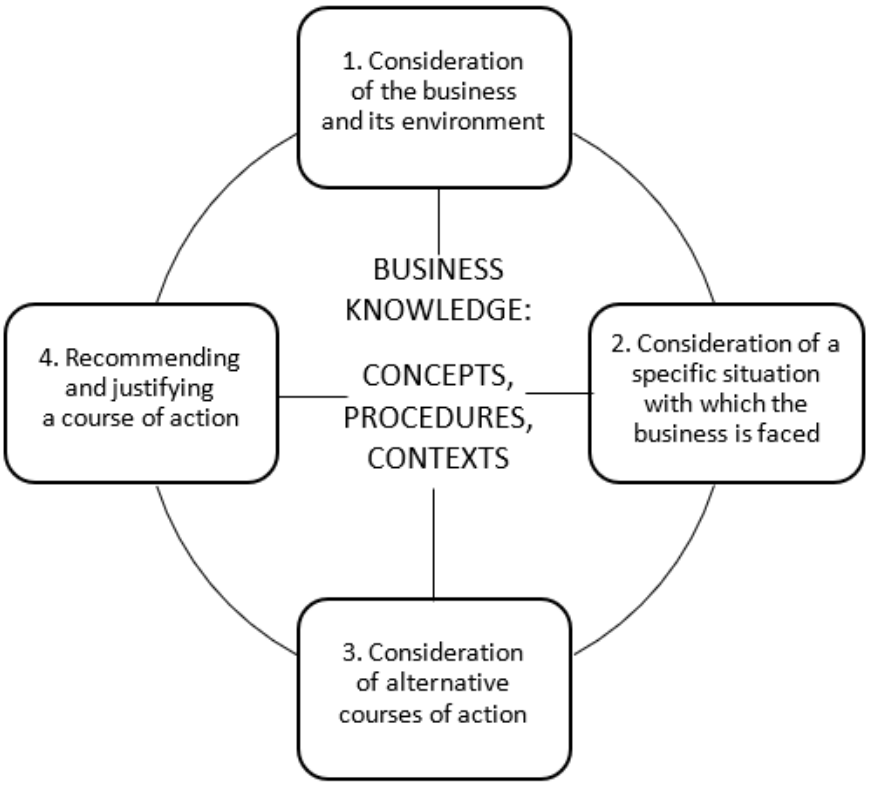

Figure 1: Tentative model of business reasoning

An important point that we have noticed in our thinking and research is that all four stages of the model are vital for really high quality reasoning, but that they aren't necessarily sequential from stages 1 to 4. It's common to see iteration between the stages. We also noticed that sometimes people don't articulate all four stages – for example, some of our participants moved directly from stage 2 to stage 4, deciding on a course of action without explicitly considering the alternatives available to them or the business. When pushed to elaborate on alternatives they could do so, but they completed this stage of reasoning in their head rather than 'out loud'. Interestingly, some people reasoned from the point of an outsider (e.g., *'I think the manager is facing this problem…'*) while others put themselves in the shoes of the protagonist of the case (e.g., *'the problem I'm facing here is…'*).

Why do we think this model is helpful?

First of all, we see the model as an opportunity to help business teachers in secondary education to model their own thinking more explicitly as part of their teaching. Remember that we said that some of our participants skipped over stage 3 because they did this reasoning in their mind? Following the stages explicitly could help teachers to make sure they verbalise their

thinking throughout all stages of reasoning. Naming the stages / identifying the different elements of reasoning should also help students to recognise the different skills that their teachers are modelling.

Secondly, since assessment frameworks for school business subjects require students to justify their reasoning explicitly, our model of business reasoning has value in supporting students to articulate their own reasoning. To help students internalise this process, it may be productive to focus on deconstructing and elaborating all stages of the model as part of teaching. When using the business reasoning model in the classroom, 'prompt questions' may be developed to encourage students to address different parts of the reasoning model. As an example, during the first step of our model, a general prompt question may be: '*What are the important features or characteristics of this business and why are these important?'*. More specific prompts may involve asking students questions such as: '*What features or characteristics do you notice?', 'Which information is about internal factors, and which is about external factors?', 'Which information have you used to identify these features or characteristics?', 'Why have you picked these features or characteristics in particular?', 'What makes them important to you?', 'Who are the main stakeholders in this case?',* and *'What are their important characteristics?'* The model could also be used for students to self-assess or peer-assess written and verbal responses to case studies, and to set specific action steps in teacher feedback.

What next?

As we are still working on refining this model for business reasoning in secondary education, we would like to invite you to comment on our emerging thinking from your personal professional viewpoints and/or experiences. Comments may include, but need not be limited to, the model's theoretical soundness and its practical implications for use in teaching. As it may advance our work in progress on this topic, we very much look forward to hearing from you with any ideas or comments that you would like to share. Please get in touch via email to: roel.grol@han.nl.

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