

Aristotle's Phronesis: Putting some Meat on the Philosophy of Innovation

Gabriel J. Costello

Galway-Mayo Institute of Technology, Galway, Ireland

[*gabrielj.costello@gmit.ie*](mailto:gabrielj.costello@gmit.ie)

Abstract

This paper investigates Aristotle's ethical writings, especially examining his synthesis of the ideas of knowledge and wisdom and their application in practice. This he achieved through the concept of phronesis (*phronēsis*) variously described as practical wisdom with connotations of intelligence and soundness of judgement. The paper argues that the management and teaching of innovation requires a bottom-up approach to "put some meat" on the recent theoretical examinations of responsible innovation. In particular, it addresses the following research question: How can phronesis be developed in educational practice? The paper makes a novel contribution by describing an empirical case study of embedding Aristotle's phronesis in the curriculum of Engineering and Business students, working in cross-functional teams. A philosophical schema was developed and summarized in tabular form, which can be used to phronetically examine the outputs from educational projects in the area of innovation. Furthermore, these guidelines provide suggestions for the development of phronesis in the formation of professionals and managers.

Keywords: phronesis, Aristotle, teaching of innovation, philosophy of innovation, responsible innovation

1 Introduction

Dante in the Divine Comedy describes his encounter with Aristotle as follows: “I saw the master sage of those who know” Inferno Canto IV, 131 (Dante, 1984 translation) .

Dante considered Aristotle as epitomizing the pinnacle of human reason and his references to Aristotle came second only to that of the Bible. Without doubt, Aristotle is one of the most influential thinkers in the history of western civilisation. His works have covered an eclectic range of subjects such as logic ethics, metaphysics, politics, natural science and physics (ODE, 2006). Aristotle’s science was not superseded until the scientific revolution of the 16th and 17th centuries (ODS, 1999). Crithcley (2001) points out that among other things, ancient philosophy endeavoured to amalgamate knowledge and wisdom: “namely, that knowledge of how things were the way they were would lead to wisdom in the conduct of one’s life. The assumption that ties knowledge and wisdom together is the idea that the cosmos as such expresses a human purpose. This is called the “teleological view of the universe” (p. 7). This paper will focus on Aristotle’s ethical writings, especially examining his synthesis of the ideas of knowledge and wisdom and their application in practice. This he achieved through the concept of *phronesis* (*phronēsis*) variously described as practical wisdom. Taylor (2005) explains *phronesis* as having, in ancient Greece, connotations of intelligence and soundness of judgement. In his deliberations on ethics, Aristotle used the term to represent the complete excellence of the practical intellect. In the practical sphere, it was the equivalent of *sophia* in the theoretical sphere.

This paper argues that the management and teaching of innovation requires a bottom-up approach to “put some meat”¹ on the recent theoretical examinations of responsible innovation (Blok, 2014; Blok, Hoffmans, & Wubben, 2015; Blok & Lemmens, 2015). In particular it will address the following research question derived from a suggestion for future work in a paper devoted to the related theme of virtuous competence (Blok, Gremmen, & Wesselink, 2016p. 319) .

How can phronesis be developed in educational practice?

While much has been written on *phronesis*, there is a dearth of empirical work on the how the concept can be developed and implemented in practice (which is ironical given the nature of the idea). This paper will contribute to this nascent debate by providing empirical evidence of embedding Aristotle’s *phronesis* in the curriculum of future managers, in this case Engineering and Business students, working in cross-functional teams.

The structure of the proposed paper will be as follows. First there will be a review of Aristotle’s concept of *Phronesis* with reference to the *Nicomachean Ethics*. Then there will be an examination of

¹ EN Book VI Chapter 7 (Aristotle, 1967 translation)

the contemporary topic of phronesis and the recent interest in the area resulting from the scholarship of Bent Flyvbjerg. Next, a case study will be presented which has the objective of embedding phronesis in the curriculum of Engineering and Business students working in cross-functional teams. A discussion of the implications of Phronesis for the management and teaching of innovation will be presented together with suggestions for future work. Finally, the conclusions of the study are summarised.

2 Phronesis and its Origin in the Nicomachean Ethics

A man is aware that light meats are easily digested and beneficial to health but does not know what meats are light. Such a man is not so likely to make you well as one who knows that chicken is good for you.

Aristotle

Taylor (2005) defines phronesis as “comprising a true conception of the good life and the deliberative excellence necessary to realize that conception in practice via choice”. In the Nicomachean Ethics, Aristotle describes three approaches to knowledge: *episteme*, *techne* and *phronesis*. Flyvbjerg (2001) explains that “whereas episteme concerns theoretical know why and techne denotes technical knowhow, phronesis emphasizes practical knowledge and practical ethics” (p. 56). He summarizes the three as follows (p. 57):

- **Episteme - Scientific knowledge.** Universal, invariable, context-independent. Based on general analytical rationality. The original concept is known today from the terms “epistemology” and “epistemic.”
- **Techne - Craft art.** Pragmatic, variable, context-dependent. Oriented toward production. Based on practical instrumental rationality governed by a conscious goal. The original concept appears today in terms such as “technique,” “technical,” and “technology.”
- **Phronesis - Ethics.** Deliberation about values with reference to praxis. Pragmatic, variable, context dependent. Oriented toward action. Based on practical value-rationality. The original concept has no analogous contemporary term.

Flyvbjerg continues to elaborate on the term phronesis in Aristotelian terms:

In Aristotle’s words phronesis is a “true state, reasoned, and capable of action with regard to things that are good or bad for man.” Phronesis goes beyond both analytical, scientific knowledge (episteme) and technical knowledge or know-how (techne) and involves judgments and decisions made in the manner of a virtuoso social and political actor. I will argue that phronesis is commonly involved in social practice, and that therefore attempts to reduce social science and theory either to episteme or techne, or to comprehend them in those terms, are misguided.(ibid. p 14)

Aristotle has his name associated with two treatises on Ethics; the Eudemian and the Nicomachean. The former is regarded to have been edited by his pupil Eudemus while the latter by his son

Nicomacheus. A third and little know work by Aristotle is called the Magna Moralia. The Nicomachean Ethics is dated to the last period of Aristotle’s life when, in his fifties or sixties, he was head of the Lyceum. Ross (1954) explains that Aristotle regards the purpose of human life as “consisting of the pursuit of ends” (p. vi) and describes this end as being *eudaimonia*. This concept however is usually translated unsatisfactorily as “happiness”; since Aristotle goes beyond this and contends that *eudaimonia* is “an activity of soul in accordance with virtue (p. vii)”. Aristotle describes his idea of virtue as being an activity.

Just as men become builders by building, they become just by doing just acts, and temperate by doing temperate acts....And activities which produce excellence are those in which both excess and defect are avoided (p. viii).

Thompson (1967) however reminds us that Aristotle was keen to take other views into account when developing his ethical program and that he had a genuine understanding of human nature. Furthermore statements like “man is a social animal” now seem to be a cliché but when first proposed by Aristotle it was quite revolutionary. According to Ross (1954), the plan of the Nicomachean Ethics is not simple and was probably delivered as a series of lectures. He provides the following taxonomy of the work (p. v) which is summarized in table 1 below.

Table 1: A taxonomy of the Nicomachean Ethics from Ross (1954)	
Bk. 1	Deals with the nature of good for man and divides goodness into intellectual excellence and moral excellence.
Bk. 2-4	These deal with moral excellence and discuss particular moral virtues in detail. Virtue according to Aristotle being a state of character concerned with choice.
Bk. 5	Discusses one of the two cardinal virtues not dealt with in Bks 2-4 – namely justice.
Bk. 6	Discusses the various form of intellectual excellence. In Aristotle’s scheme, phronesis is classified as one of several ‘intellectual virtues’ or ‘excellences of mind’ (Kinsella 2012).
Bk. 7	Earlier part discusses two conditions which lie between virtue and vice – continence and incontinence. The later part is a discussion of pleasure.
Bk 8-9	These are on the subject of friendship and are not regarded as core to the theme of Ethics.
Bk 10	Elaborates on the concept of <i>eudaimonia</i> which is translated by Ross as well-being.

Chapter six of the Nicomachean Ethics discusses a number of characteristics of the mind and in particular the two main intellectual virtues *phronesis* (practical wisdom) and *sophia* (philosophic wisdom) (Ackrill, 1973). Furthermore, the person who has phronesis can be described as a *phronimos* having the following attributes (p. 28)

The *phronimos*² is good at deliberation: he can sum up a situation, weigh up various factors, and work out what to do to promote or achieve his objectives. Often enough, because of his experience and wisdom, he can see straight off the best thing to do, without having to go through a process of deliberation.

In chapter seven Aristotle provides the following guidelines.

Observe, too, that prudence (practical wisdom) is something more than knowledge of general principles. It must acquire familiarity with particulars also, for conduct deals with particular circumstances and prudence is a matter of conduct. This accounts for the fact that men who know nothing of the theory of their subject practice it with greater success than others who know it. It is in fact experience rather than theory that normally gets results. Practical wisdom being concerned with action, we need both kinds of knowledge; nay, we need the knowledge of particular facts more than general principles". *Nicomachean Ethics Book VI Chapter 7 (Aristotle 1967 translation)*.

Kinsella and Pitman (2012) state that their book on phronesis originated from a continuing conversation in which "we voiced concern (bordering on distress) regarding the instrumentalist values that permeate (often without question) our professional schools, professional practices, and policy decisions. Like others, we were grappling with a sense that something of fundamental importance—of moral significance— was missing in the vision of what it means to be a professional, and in the ensuing educational aims in professional schools and continuing professional education (p.1). Phronesis, on the other hand, is an intellectual virtue that implies ethics. It involves deliberation that is based on values, concerned with practical judgment and informed by reflection. It is pragmatic, variable, context-dependent, and oriented toward action (p.2)". In thinking about how practitioners might enact phronesis, Kinsella (2012) argues in a related chapter that attention to reflection and judgment is key. Kinsella's study is informed by the seminal reflective practice work of Donald Schön (1983) but suggests a further extension. She proposes a continuum of reflection that informs professional action from (a) receptive or phenomenological reflection, to (b) intentional cognitive reflection, to (c) embodied or tacit reflection, to (d) critical reflexivity. Her analysis acknowledges that reflection can take many forms: it can be deep, interior, emotional, and introspective; it can be intentional and based in reason; it may also be tacit, embodied, and revealed in intelligent action; and, further, it may be used to critically interrogate assumptions about taken-for-granted understandings in professional life. (p. 4). Phronesis is defined in different ways but usually in ways that imply the significance of reflection, both tacit and explicit; that highlight a relationship to morality; and that convey a relationship between reflection and action. Phronesis emphasizes reflection (both deliberative and that revealed through action) as a means to inform wise action, to assist one to

² While the quotation uses *phronimos* as masculine, it goes without saying that the term equally applies to the feminine.

navigate the variable contexts of practice, and as directed toward the ends of practical wisdom.(p 35). In management scholarship, Andrew Van de Ven (2007) dates the concept of phronesis back to Aristotle who in *The Nicomachean Ethics*, distinguished between:

- *techne* (applied technical knowledge of instrumental or means-ends rationality),
- episteme (basic knowledge in the pursuit of theoretical or analytical questions),
- phronesis (practical knowledge of how to act prudently and correctly in a given immediate and ambiguous social or political situation).

According to Van de Ven, saying that the knowledge of science and practice are different is not to imply that they stand in opposition or they substitute for each other; rather, they complement one another (ibid p.3).

2.1 Distinguishing contemporary from classical phronesis

Flyvbjerg described “Phronetic Social Science” as an approach to the study of social phenomena based on a *contemporary* interpretation of the *classical* Greek concept phronesis, variously translated as practical judgment, practical wisdom, common sense, or prudence. Phronetic planning research is phronetic social science employed in the specific study of policy and planning (Flyvbjerg, 2018).

In The Sage Dictionary of Qualitative Management Research, Flyvberg points out that Phronetic Organizational research effectively provides answers to the following four value-rational questions, for specific problems in management and studies:

1. Where are we going with this specific management problem?
2. Who gains and who loses, and by which mechanisms of power?
3. Is this development desirable?
4. What, if anything, should we do about it?

Thus, in his view, Phronetic Organizational Research concerns deliberation, judgement, and praxis in relation the four questions. Praxis is the process by which *phronesis*, as a concept becomes lived reality. Now an example of putting the concept into practice in an educational module on Innovation and Enterprise, will be outlined.

3 Case Study: Embedding Phronesis in the Curriculum

In this section I will outline how the concept of phronesis has been embedded in an Educational Module where cross-functional teams from Engineering and Business programs in in the Galway-Mayo Institute of Technology (GMIT) work together on an entrepreneurial project. This project involves submission of a business idea to the Enterprise Ireland Student Awards competition (Student Awards, 2018). Since 1997 Enterprise Ireland has invested approximately €50 million in providing

incubation centres to the third-level sector, located in both Universities and Institutes of Technology (Enterprise Ireland, 2018). The aim is to encourage the set-up of high-tech, knowledge-intensive enterprises. Enterprise Ireland funded two incubation centres in the Galway-Mayo Institute of Technology (GMIT) in late 2005 and mid-2006: one on the Galway campus and the other on the Mayo campus. The establishment of the Galway and Mayo incubation centres was part of an overall strategy of building regional innovation capability through Institutes of Technology. The Hubs provide start-up services and business development supports in a number of areas: financial, legal, sales and marketing, strategic planning, mentoring and networking. Enterprise Ireland organise the annual Student Entrepreneur Awards, which are open to all fulltime third-level students on the island of Ireland. The Student Entrepreneur Awards are part of an ongoing drive aimed at tapping into the potential for students to turn entrepreneurial ideas into commercial businesses. The objective is to encourage third-level students to start their own business as a career option. In 2018, the Mechanical and Industrial Engineering department and the Business School in GMIT collaborated with eleven cross-functional teams who submitted their ideas to the competition. The purpose of this case study is to demonstrate the process in which the teams operated and how it was designed to facilitate the students developing phronesis or, as it is also known, practical wisdom. The five high-level steps in the process are outlined in Figure 1. However, it must be remembered that the steps are for guidance rather than being prescriptive. The actual projects are iterative with multifaceted feedback loops and include many practical challenges that the team member must deal with, which require phronesis rather than being able to follow a rigid formula.

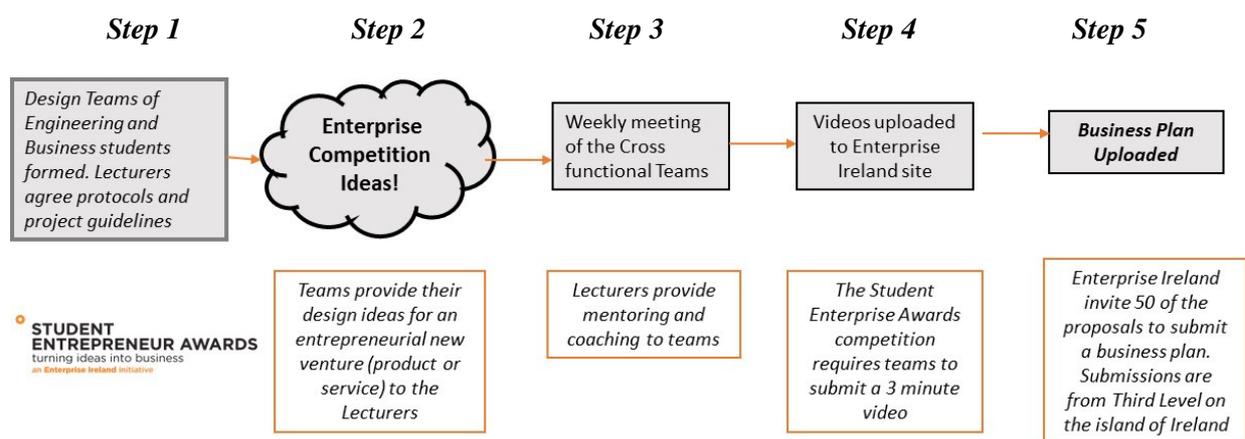


Figure 1: Innovation Team Process

These practical challenges are outlined in table 1, referred to as the Phronetic Innovation Project Process. Each step includes a commentary that explains how it contributed to development of phronesis among the student teams.

Table 1: Phronetic Innovation Project Process	
Step 1	<ul style="list-style-type: none"> A lecturer from both Engineering and Business Schools meet to organise student team members, agree relevant protocols, publish project strategies and examine the guidelines published by Enterprise Ireland that governed the 2018 competition. <p><i>Phronetic learning:</i> <i>This meeting set the groundwork and deliverables that would facilitate the teams working and learning together. It also involved the lecturers having to exhibit phronesis in developing a process for working together within an ill-defined context.</i></p>
Step 2	<ul style="list-style-type: none"> Project teams meet and get to know each other and visit the Student Awards website in order to agree a shared meaning of the project requirements. The teams then proceed to the “ideation” stage in order to identify a business idea that meets the Enterprise Ireland criteria i.e. technically advanced and with the potential to create jobs. They also develop a detailed project plan in the form of a Gantt chart with deliverables and responsibilities. <p><i>Phronetic learning:</i> <i>The ideation stage contains techniques such as brainstorming and mind-mapping as well as detailed research. Much of this work involves interactions and decisions that cannot easily be described and outcomes that cannot be predicted. Thrown together in a cross-functional team is a new and challenging experience.</i></p>
Step 3	<ul style="list-style-type: none"> The teams present their entrepreneurial ideas to the lecturers who now act as coaches and mentors rather than conventional lecturers. Project teams develop a solution over the duration of the semester. Project teams hold weekly meetings during class where individual students have to take responsibility for chairing the meeting. <p><i>Phronetic learning:</i> <i>Working together and communicating with colleagues from a different academic background involves making practical decisions within the context of new interpersonal relations. Lecturers no longer give answers but advice and general direction. Decision-making is now transferred to the students within the constraints of reconciling their disciplinary backgrounds and individual skills and competencies.</i></p>
Step 4	<ul style="list-style-type: none"> The teams create a 3 minute video to demonstrate their idea focusing on the following criteria: <ol style="list-style-type: none"> 1. What the product is 2. Who you think will buy it 3. How quickly you can commercialise it 4. Its export potential 5. Is there a competitor? If yes, why is your idea better? <p><i>Phronetic learning:</i> <i>The scripting and shooting of the video involves many decisions that the students would not have been previously been exposed to. Rules and regulations must be replaced by negotiation, motivation and persuasion. Something as imprecise as a video production involves practical decision making with group consensus.</i></p>
Step 5	<ul style="list-style-type: none"> The teams then proceed to develop a business plan using guidelines provided by the lecturers and a template available on the Student Awards website. Fifty projects are chosen by the judges from all of the videos submitted to the Enterprise Ireland website. If any of the cross-functional teams are successful they must upload their business plan to this site. If they are not successful, the teams must submit the completed business plan to the lecturers for grading via Moodle, an open-source learning management system supported by GMIT computer services. <p><i>Phronetic learning:</i> <i>The development of the business plan requires many prudent and practical decisions by the cross-functional teams. One interesting comment from many of the students describes how they learned from student team members from the other discipline. The teams also have to navigate, what for them, is uncharted waters. For example, dealing with not being successful with Enterprise Ireland while keeping the team motivated to focus on getting the best grade possible.</i></p>

It must be acknowledged that this study is relatively recent, and still needs to be honed through academic debate and review. However it is an attempt to address, the dearth of “practical” empirical studies on the pedagogical approach to facilitate the learning of phronesis in educational practice. I would also suggest that much of the conclusions of this study is applicable to professional managerial education and practice.

4 Discussion: Implications of Phronesis for Educational Practice

Sand (2018 p. 79) describes innovation process as being “extremely complex and opaque, which makes it tough or even impossible to govern them”. Furthermore, he argues against dismissing “the agent-centred approach to responsibility” for the process of innovation. To address this, he has developed a virtue ethical approach. His methodology involves discussing science fiction and biographical literature to elucidate his thesis. This present paper goes a step further by analysing a real-world case study of the teaching of innovation to third-level students. Recently Blok (2017) has requested a new research agenda for the philosophy of innovation stating that “this calls for an opening up of the concept of innovation and the philosophical reflection on a concept of innovation that is able to address the grand challenges of our time”. Furthermore, the aim of this paper is to contribute to the debate by providing empirical evidence of embedding Aristotle’s phronesis in the curriculum of future managers, in this case Engineering and Business students, working in cross-functional teams. To support the goal, I will now discuss five concepts from the philosophical literature that emerged from the review above with the objective of developing a taxonomy that will assist the development of phronesis in the education of innovation. These concepts are: the common good, the exercise of power, hermeneutics, ethics and agency.

4.1 Phronesis and the common good

It is thought that every activity, artistic or scientific, in fact every deliberate action or pursuit, has for its object the attainment of some good.

Aristotle Nicomachean Ethics Book 1 (Aristotle, 1967 translation)

In Taylor’s definition of phronesis provided above, the idea of phronesis is tied to the concept of “a good life”. The debate on the importance of the common good is an ancient one, with Cicero’s works, *De legibus* and *De republica*, being “famous for their assertion on human rights and the brotherhood of man” (Gashin, 2005). According to Musa, a major theme throughout the writings of Dante was that “the man who does not contribute to the common good fails sadly in his duty” (Musa, 1984). Ross (1954 p. vii) proposes, from his work on the Nicomachean Ethics, that “human good turns out to be ‘activity of soul in the sense of being obedient to a rational principle or of apprehending such as principle ‘; in other words, either good moral activity or good intellectual activity”.

Jacques Maritain was an important philosopher on the subject of the common good (Maritain, 1973) and was a leading architect of the United Nations Universal Declaration of Human Rights in 1948. Maritain draws heavily on the work of St. Thomas Aquinas who is credited to introducing Aristotle's thought to the West (Jaffa, 1952) in the thirteenth century at considerable personal cost to his standing as a philosopher. Copleston (1955) tells us that "in developing his philosophy Aquinas made considerable use of Aristotle" (p. 59) and "that it is clear that both men developed teleological theories of ethics, the idea of the good being paramount. For both of them human acts derive their moral quality from their relation to man's final end" (p. 198). They also shared the view "that it is the possession of reason which distinguishes man from the animals, to whom he is in many ways similar. It is reason which enables him to act deliberately, in view of a consciously apprehended end and raises him above the level of purely instinctive behaviour" (p. 204).

4.2 Flyvbjerg's Phronetic Social Science and the Concept of Power

Philosophy begins with Aristotle

Foucault quoted in Flyvbjerg (2001 p. 8)

In Aristotle's words phronesis is a "true state, reasoned, and capable of action with regard to things that are good or bad for man." Phronesis goes beyond both analytical, scientific knowledge (episteme) and technical knowledge or know-how (techne) and involves judgments and decisions made in the manner of a virtuoso social and political actor. Flyvbjerg (2012) argues that phronesis is commonly involved in social practice, and that therefore attempts to reduce social science and theory either to episteme or techne, or to comprehend them in those terms, is misguided. They know that knowledge is power and that they have a civic duty to use this power – and use it wisely, that is, phronetically – in the service of the communities in which they live (S. F. Schram, Flyvbjerg, & Landman, 2013, p. 26).

Flyvbjerg (2001) contends that the "principal objective for social science with a phronetic approach is to carry out analyses and interpretations of the status and values and interests in society aimed at social commentary and social action, i.e. praxis. The point of departure for classical phronetic research can be summarized in the following three value-rational questions (p. 60)":

1. Where are we going?
2. Is it desirable?
3. What should be done?

Not without controversy and positioning himself against the influential world-view of Habermas, Flyvbjerg argues that "social and political thinking becomes problematic if it does not contain a well-developed conception of power". Consequently he focuses on "Michel Foucault's analysis of power as a means of developing a more adequate and contemporary conception of phronesis" (p. 110).

Furthermore the implications of his analysis of power results in his adding a fourth question to the ones above.

4. Who gains and who loses; by which mechanisms of power?

In summary, the question of power differentiates contemporary phronesis from classical phronesis. In a related work, Schram (2012p. 18) suggests four “inter-related reasons for promoting phronetic social science over the mainstream variety”. Flyvbjerg (2001 p.159) concludes that “reaching the dialogical mode of communication seems crucial to me for practicing phronesis in a democratic society”

4.3 Phronesis and the Hermeneutic of Hans-Georg Gadamer

Though its sphere is the same as practical wisdom, understanding and practical wisdom are not the same. Practical wisdom issues commands: its end is to tell us what we ought to do and what we ought not to do. Understanding, on the other hand only passes judgment.

Aristotle (1978 translation) (p. 164)

Malpas (2005) has described Hans-Georg Gadamer as the decisive figure in the development of twentieth century hermeneutics and indeed his long life spanned the whole of this period from his birth in 1900 to his death in 2002. An important facet of Gadamer’s work was his immersion in the Greek tradition and in particular the program proposed by Socrates, Plato and Aristotle of pursuing philosophy through dialogue and engagement with the *practical*. In fact both Plato and Aristotle saw “philosophy as engaging with practice (Moran, 2000, p. 268). Tredennick (1969) points out that Socrates insisted that he was not a teacher but a sort of intellectual mid-wife who helped “others to bring their thoughts to birth”. The Aristotelian concept of phronesis (practical reasoning) is central to his development of hermeneutical understanding in Hans-Georg Gadamer’s major philosophical work *Truth and Method*.(p. 8) (Dostal, 2002). Heidegger’s early analysis of Aristotle’s phronesis helped Gadamer see that Aristotle’s practical philosophy exemplifies integral hermeneutics. When he makes phronesis the heart of his philosophical hermeneutics, Gadamer removes all the ambiguity from Heidegger’s insight into the relevance of phronesis for a philosophy of human historicity (Lawrence, 2002). On the contrary, Gadamer maintains, reading Plato in light of Aristotle’s critique, “we see how close the knowledge of the good sought by Socrates is to Aristotle’s phronesis” (IG 33– 4).(p 212) (Zuckert, 2002). Whether we are dealing with morality, ethics, or politics, Gadamer advocates the necessity for cultivating hermeneutic sensitivity and phronesis in all dimensions of human life. He even speaks of the “one-sidedness of hermeneutic universalism (p. 275). “Gadamer appeals to the tradition of practical philosophy and to the Aristotelian conceptions of praxis and phronesis as a corrective to the growing insidious pervasiveness of technological thinking” (p. 279) (Bernstein, 2002).

4.4 Phronesis and “the ethic” of Emmanuel Levinas

Happiness is an activity of soul in accordance with perfect virtue

(Aristotle, 1973 translation) (p. 57)

Emmanuel Levinas is a key catalyst in the development of French twentieth century philosophy including the emergence of the existentialism of Jean-Paul Sartre and Maurice Merleau-Ponty (Davis, 1996, p. 3). His major work *Totality and Infinity (1961)* explored such themes as time, death, and relations with others and increasingly his philosophy was concerned with marking out an ethical “face-to-face” with the Other: a concept that while “immediate and singular, is none the less transcendent” (Ainley, 2005, p. 512). Levinas gave phenomenology a radical ethical orientation variously described as his “phenomenology of alterity (*alterité*)” or his “phenomenology of sociality” that starts from the experience of “the face” (*le visage*) and emanates from the other’s “proximity”. However the links between Levinas and Aristotle are quite sparse in the literature with the notable exception of Bergo (2015). As a result the topic offers fruitful potential for future work

4.4.1 A Phronetic Taxonomy

The output from an innovation process is an artefact of some description, a product or service or something intangible like a business idea or business process. In table 2, I summarise the previous discussion into a taxonomy of philosophical concepts and related questions designed to investigate and evaluate such artefacts developed by student cross-functional teams using a phronetic approach.

Table 2: Taxonomy for Investigating a Phronetic Educational Artefact	
<i>Philosophical concept</i>	<i>Related question</i>
<i>Common good</i>	Does the artefact contribute to the common good?
<i>Power relations</i>	Does the artefact support power as service or power as domination?
<i>Hermeneutic</i>	Does the artefact meet the requirement of universal design i.e. is it understood and accessible to all?
<i>The “Other”</i>	Does the artefact consider the ethical “face” of the Other?
<i>Agency*</i>	Does the artefact developer attribute responsibility to persons rather than abstract structures?

*The concept of Agency is derived from the study by Sand (2018) that was discussed above.

4.5 Considerations for Future Work

I will now outline a number of topics that I suggest require further work and debate.

4.5.1 Implications for Theory and the Consequences for Case Studies

Thomas (2011) argues that the case study is concerned with phronesis rather than theory and that this has far reaching implications for social science research. Here is his summary of phronesis in the context of a case study.

Phronesis is practical knowledge. It is a model based on personal experience. It is personal, and it helps us make sense of particular situations (p. 214)

As a result there is a pressing need to move from generalizable knowledge and development of theory associated with the dominant inductive approach, which is unattainable in the complex world of practice. Instead of talking about theory when examining case studies, we should be talking about phronesis. Drawing on MacIntyre and others, Thomas argues that the prevailing deduction-induction nexus leads to a dead end. He provocatively proposes -after Fish (1990) - that much of what passes for theory in the social sciences is not theory at all but is *theory talk* that is “any form of talk that has acquired cachet and prestige”. In its place, he proposed a move towards the “exemplary” knowledge of abduction and phronesis which provides meanings which are “malleable and interpretable in the context of varieties of experience”. Is it interesting that Flyvbjerg (2011) makes a similar point in his chapter on the “Case Study” in *The Sage Handbook of Qualitative Research* .

4.5.2 Flyvbjerg and the question of truth

The question to be addressed is my concern about a drift towards relativism and even nihilism (Weber, 2003a, 2003b, 2004) captured in the following question: Does truth exist and is it possible to attain? This is according to Dr. Johnson of fundamental importance for “without truth, there must be dissolution of society”. Maritain (1932) describes how Socrates confronted the mercenary tendencies of the Sophists by reforming philosophic reasoning and directing it to seek nothing but the truth and supports the school of Aristotle -St. Thomas Aquinas that truth is neither impossible or easy but is difficult to attain. He also argues that the denial of truth can be confronted by a “*reductio ad absurdum*” using the following line of argument: When someone says *that they do not know whether any proposition is true* then either:

- they do in fact know this proposition is true; in which case they contradict themselves OR
- they do not know whether it is true; in which case they are condemned to absolute silence – even mental silence (Maritain, 1932, p. 181).

However, I believe it is possible to agree with Flyvbjerg’s main thesis on phronesis while disagreeing with his view of the relativity of truth in the deliberations of the academy. This, I propose, requires further investigation and debate.

In the final section, I will present my conclusions for this paper.

5 Conclusions

We are what we repeatedly do. Excellence, then, is not an act, but a habit.

Aristotle

Engaging with the practical is part of a tradition that goes back to Aristotle “who made frequent reference to concrete examples to illustrate his theoretical points” (Kenny, 2010). Markus and Saunders (2007, p. iv) in their call for more concepts and theories to stimulate management research have specifically requested essays that explore the philosophical foundations on which management theory and research is built. The approach of this paper was to examine the origins of the term phronesis in the ethical writings of Aristotle and to review its influence on contemporary scholarship. The paper discussed contemporary utilization of the concepts of “good” and “phronesis” in the relatively recent body of philosophical debate in the management discipline. A particular emphasis was placed on the work of Bent Flyvbjerg who has recently positioned the concept of “phronetic social science” firmly on the academic agenda. The paper makes a novel contribution by describing an empirical case study of embedding Aristotle’s phronesis in the curriculum of Engineering and Business students, working in cross-functional teams. A philosophical schema arising from the discussion was summarized in tabular form that can be used to phronetically examine the output from education projects in the area of innovation. These guidelines provide suggestions for the development of phronesis in the formation of future professionals and managers. The study is limited as the empirical work was carried out recently and a full analysis of comments by team members have not yet been completed. The arguments and proposals arising from the paper require further refining through scholarly engagement.

A parting word from Kemmis and Smith:

A quality of mind and character and action— the quality that consists in being open to experience and being committed to acting with wisdom and prudence for the good. The person who has this virtue has become informed by experience and history and thus has a capacity to think critically about a given situation...and then to think practically about what should be done ...When we have phronesis , we are thus prepared...to take moral responsibility for our actions and the consequences that follow from them. The virtue of phronesis is thus a willingness to stand behind our actions.

Kemmis and Smith (2008) (p. 156) quoted in (Kinsella & Pitman, 2012, p. 164)

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