

Empowering young people: Powerful knowledge in economics

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Abstract

Powerful knowledge in school economics is conceptualised as the blending of economics knowledge arising from grasping threshold concepts with expressions of disciplinary thinking in terms of the powers or capabilities that this knowledge can provide to students who possess it. In this paper, I adopt this framework to explore what constitutes powerful disciplinary knowledge in school economics that empowers students with knowledge that takes them beyond their everyday knowledge and experiences. A qualitative research approach is employed, consisting of interviews and observations with school economics teachers, as well as focus group discussions with students. Thematic analysis is used to analyse the data. The findings further extend the theory of powerful knowledge to school economics, refining what constitutes powerful disciplinary knowledge in the subject and instigating a debate about what constitutes powerful disciplinary knowledge that enables young people to achieve epistemic access, thereby enhancing their human growth.

KEYWORDS

economics education, powerful knowledge, powerful knowledge in school economics

INTRODUCTION

Powerful knowledge is distinct from students' everyday knowledge and personal experiences. It is specialised and governed by rules and boundaries, focusing on a more conceptual understanding (Young, 2008, 2021). Students can be empowered to cultivate their

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Key insights

What is the main issue that the paper addresses?

This paper explores what constitutes powerful knowledge in school economics, particularly within the Maltese context. It addresses the gap in empirical research on how economics education equips students with disciplinary understanding that transcends everyday experiences, and how school economics can foster agency and epistemic access through exposure to discipline-based knowledge.

What are the main insights that the paper provides?

The study argues that powerful knowledge in economics is the blending of economics knowledge gained through understanding threshold concepts with expressions of disciplinary thinking. It demonstrates how economics education enhances students' ability to analyse, debate and evaluate economic realities, empowering them as informed citizens capable of envisioning alternative socio-economic futures.

capacity for innovative thinking by applying their knowledge to novel and unexpected situations outside their expertise.

A teacher's opportunity and challenge is to respond to the question concerning the nature of powerful disciplinary knowledge in a subject and ask whether the curriculum goes beyond the students' experiences to empower them with a sense of agency. This empowerment stems from the students' entitlement to acquire knowledge that offers them learning opportunities that surpass their existing understanding.

The view adopted in this paper is that the 'powerful' in powerful knowledge refers to a dispositional capacity—the ability to do or understand certain things as a result of engaging with disciplinary knowledge (Talbot, 2023). This conception aligns with the idea that students are enabled to envisage alternatives and think beyond dominant knowledge structures. By contrast, knowledge of the powerful refers to the exercise of domination and does not constitute power in the dispositional sense relevant to educational empowerment.

School economics education lacks empirical evidence and theoretical development, particularly in the domain of powerful knowledge in the subject (Mizzi, 2022, 2023b; Shanks, 2020). This paper contributes to the paucity. Mizzi (2023b) proposes a peer-reviewed conceptualisation of powerful knowledge in school economics. This paper uses this conceptualisation as a framework to investigate powerful knowledge in school economics education in Malta.

CONCEPTUALISING POWERFUL DISCIPLINARY KNOWLEDGE IN ECONOMICS

Mizzi (2023b) proposes two types of powerful knowledge in school economics. The first type is theoretical and integrated within a coherent framework of ideas. The second type derives from the initial category and equips students with the intellectual ability to analyse and contemplate the world in ways that surpass their experience.

Discipline-based knowledge

Identifying the economic concepts satisfying the epistemic conditions set by powerful knowledge is not easy. Mizzi (2023b) approaches this endeavour by drawing upon the economics threshold concepts proposed in the literature (Davies, 2018; Davies & Mangan, 2007; Meyer & Land, 2003; Modig, 2021; Shanahan, 2016). These concepts serve as a tool for determining the economic content that students need to be exposed to in school, equipping them to address the economic challenges they encounter in their lives. Developed by professionals within epistemic communities, they possess authoritative knowledge from a disciplinary standpoint (Modig, 2021). Acquiring specialised knowledge empowers students to think critically and articulate their perspectives on various issues with enhanced understanding (Mizzi, 2023b). Economics threshold concepts fulfil the requirements of powerful knowledge by allowing students to think critically about the economic world, leading to changes in their perceptions and behaviour.

The threshold concepts in economics include opportunity cost, price formation through market interaction (including elasticity), marginality and general equilibrium. Opportunity cost is the most emphasised concept in the literature (ibid.). It is the basis of a network of interconnected concepts, including the production possibility curve (PPC), consumer choice, demand schedules, supply decisions, perfect competition, efficiency, comparative advantage, incentives, price signals and markets.

Expressions of powerful knowledge

These are aspects of economics knowledge that can be considered powerful as they stem directly from Young's definition of powerful knowledge, which is knowledge that equips students with the intellectual capacity to analyse the world in ways that surpass their encounters (Young, 2008, 2021). Mizzi (2023b) proposes three expressions of powerful economics knowledge.

The first expression is knowledge that gives students a deeper understanding of the economic world. Economics knowledge is powerful when it enhances students' understanding of economic phenomena, especially those that extend beyond their personal experience. It is powerful in its ability to provide an explanatory function, assisting students in comprehending economic matters. It offers them a distinctive perspective on the world through an economic framework, enabling them to make well-informed decisions as customers, citizens and employees (Mizzi, 2021a, 2021b, 2023a, 2024a, 2024c). Economic models are not perceived as absolute truths, but rather as tools that assist in understanding the structures, powers, mechanisms and tendencies that contribute to economic phenomena.

The second expression of powerful knowledge in economics relates to the knowledge that equips students with new ways of thinking about economic phenomena around them. Young people can be assisted in progressing from a surface-level understanding of a phenomenon to comprehending the underlying mechanisms that lead to its occurrence (Bhaskar, 1979, 2017). This entails transitioning from a familiar level of reality to one that elucidates the reasons behind these phenomena. They can then develop deeper explanations (Mizzi, 2023b, 2024a, 2024b, 2024c).

School economics tends to be dominated by the neoclassical school of economic thought (Brant, 2022; Mizzi, 2022, 2023a, 2023b, 2024a, 2024c). By enacting a curriculum that challenges the dominant neoclassical beliefs, teachers can cultivate a classroom climate where students can develop their thinking regarding the conception of homo economicus, which forms the basis of neoclassical economics. They assist students in questioning the notion of

homo economicus as a passive recipient of events and encourage them to perceive persons as capable of making genuine choices.

When students acquire disciplinary knowledge in economics, they learn to contextualise economics socially, historically and politically. They recognise that economics is integral to the social system and understand its interconnectedness with society. Decisions made by individuals, businesses and governments are perceived to impact other individuals, society and the environment. Young people start to explore ways of economic thinking that better incorporate humanitarian and ecological values into the economic system (Mizzi, 2022, 2023a, 2024a). Such considerations reintroduce the moral dimension into economics, encouraging students to evaluate economic arguments by examining moral values, political objectives, real-world structures and societal challenges. They are empowered not only to understand the functioning of current economic systems, but also to imagine alternatives that are more just, inclusive and ecologically sustainable. Powerful knowledge in this sense supports students in questioning prevailing assumptions and envisioning how economies might be structured differently if long-term planetary and social well-being are made central.

Powerful knowledge in economics enables students to understand macroeconomic and public finance structures, such as the economic rationale behind government budgeting, taxation and public debt (Mizzi, 2025). Concepts such as opportunity cost and marginal analysis can illuminate trade-offs in fiscal policy and resource allocation, thereby linking economics education with political economy and structural transformation (Hansen & Puustinen, 2021).

The third expression of powerful knowledge in economics is knowledge that enhances students' critical thinking on economic issues and their participation in economic debates. Powerful knowledge enables those with access to it to question it and the authority on which it is based, allowing students to become independent thinkers who can critically evaluate the opinions of others, including those of people in authority positions (Young, 2021). Young people become aware of the hold of the dominant school of economic thought, resisting its influence and capable of challenging this paradigm that often unquestionably upholds the status quo and presents theories as facts (Mizzi, 2022, 2024a). They can also develop a critical awareness of other schools of economic thought, participating in discussions encompassing diverse economic perspectives. Empowered by a critical mindset, economics students can gradually grow from being told *what* to think to learning *how* to think, seeking to understand economic reality, scrutinising economic data and critically evaluating issues and official statistics (Mizzi, 2023b). These are outcomes that can be described as powerful (Mizzi, 2023b). This conception aligns with the idea of powerful knowledge as a dispositional ability to act rather than a tool of domination (Talbot, 2023). Such knowledge provides students with the intellectual resources to question prevailing assumptions and critically engage with dominant perspectives.

METHODOLOGY

In this paper, the researcher draws upon a larger study by Mizzi (2022) to investigate how school economics education provided students with access to powerful disciplinary knowledge in economics. One major research question guiding this study was: How does economics provide school students with powerful knowledge that enables them to think beyond their everyday knowledge and experience? Critical realism was the study's conceptual framework, acknowledging that different participants may perceive and interpret the objective reality of powerful knowledge in school economics differently (Bhaskar, 2017).

A qualitative research methodology was employed. Qualitative research enables in-depth analysis, the investigation of sensitive matters and a thorough evaluation of the subject matter (Cohen et al., 2018). To gain a deeper understanding of the powerful knowledge in school economics, the researcher conducted semi-structured interviews with teachers and students and observed actual lessons. By employing these methods, the study sought to examine various perspectives. For example, observations may provide additional insights that interviews cannot capture, and vice versa. The researcher used semi-structured interviews because they offered flexibility in addressing the research question and allowed for deeper probing. This approach enabled the participants to share their understanding of the perceived reality of powerful knowledge in economics education.

Malta's educational system comprises three entities: the State, the Catholic Church and the Independent sector. Economics is included in the curriculum for students between the ages of 13 and 16, specifically between Years 9 and 11. Nevertheless, there is an inequality in incorporating this subject into the curriculum among the various providers. Although the subject is included in the curriculum of Church and Independent schools, it is not provided in State schools.

Given the relatively small population of school economics teachers, which consisted of 24 individuals, the researcher's objective was to recruit as many of these teachers as possible. Each teacher's participation in the research could contribute to a better understanding of powerful knowledge in school economics. Fourteen participants were enlisted: 11 teachers from Church schools and three from Independent schools. Permission was sought from teachers to observe one of their lessons, and 10 teachers agreed. Their teaching experience ranged from 1 to 36 years, and they taught in schools located indifferent geographical areas. The researcher observed two student teachers in the final year of their teacher education course, and two experienced participants were observed on two separate occasions. A total of 14 lessons were observed. Class sizes varied between 4 and 16 students, and gender compositions ranged from all-boys to all-girls groups. To investigate the perspectives of Year 11 students, interviews were conducted. These individuals were approximately 16 years old, nearing the end of their secondary education, and had been studying economics for the past 3 years. A total of 20 students participated in the interviews.

The data obtained from the interviews were transcribed, and the lesson observations were documented. All names were anonymised. The data were analysed thematically. Thematic analysis is advocated as a versatile method of data analysis, capable of handling complex qualitative data, which can provide a rich account of the data concerned (Braun & Clarke, 2013). The process was not treated as a linear process but as a cumulative and iterative engagement with the data. The researcher read the transcripts repeatedly with openness and curiosity, expending effort to understand how participants engaged with the notion of powerful knowledge in economics. Initial coding involved identifying patterns and classifying excerpts, ranging from phrases to whole paragraphs, into emerging themes. As this process unfolded, the structure of the codes evolved. Codes were regularly reviewed, refined, merged, reorganised or renamed to reflect the meanings in the data better. NVivo qualitative data analysis software was used to assist in managing, searching and retrieving coded data, as well as supporting the development of themes.

Codes were finally grouped under broader categories and organised into themes based on both inductive reading of the data and the theoretical framing provided by Mizzi (2023b), which helped maintain focus. Examples of final themes included: 'threshold concepts in economics', 'knowledge that enables an understanding of the economic world', 'knowledge that equips students with new ways of economic thinking' and 'knowledge that develops students' criticality of thought and their participation in economic debates'. The development of these themes required sustained interpretative work, guided by analytic questions such as: What does this theme mean? How does it relate to the research question? and What

assumptions underlie it? Themes were refined through cycles of re-reading, reviewing coherence among coded extracts and, when necessary, listening again to interview recordings to capture tone, emphasis or pauses that added nuance.

When the researcher felt that he could succinctly describe the scope and content of each theme, he started writing a narrative for each one, attempting to identify the story that each theme revealed while considering how each fitted into the overall story about the entire dataset concerning the research question. Direct quotes from the participants were included, as they aid the reader in understanding specific points of interpretation and demonstrate the prevalence of the themes.

Efforts were invested during the research to ensure the accuracy and fidelity of the data and its subsequent analysis to represent powerful knowledge in economics rigorously. Employing more than one method of data collection assisted in this endeavour. The researcher attempted to mitigate bias during the interviews and observation documentation by piloting the interview questions and observation guidelines, and being receptive to feedback from a critical friend.

RESULTS AND DISCUSSION

There are two ways of perceiving powerful knowledge in Maltese school economics. The first type is discipline-based knowledge that exists outside the direct experience of students, which is acquired when they grasp the threshold concepts of economics. These concepts in Maltese school economics are discussed immediately below in [Threshold concepts in school economics](#). The second way of perceiving powerful knowledge in economics derives from the first type of powerful knowledge. It provides students with the intellectual ability to analyse, evaluate and think about the economic world in ways that are beyond their experience. These expressions of powerful knowledge in Maltese school economics are discussed in the following sections. [Figure 1](#) provides an overview of the results.

Threshold concepts in school economics

The data from the interviews and lesson observations refer to the ideas of scarcity, choice, opportunity cost, marginality, demand and supply analysis, and market structures as concepts that can provide epistemic access to students. Teacher Robert argued that *'these concepts in economics set the framework to learn the economics content. They are the important material that students need to learn. Then everything makes sense'*. This comment resonates with the literature on threshold concepts, which describes these concepts as conceptual gateways that open up a previously inaccessible way of thinking.

Concurring with the economics threshold concepts literature, the most emphasised concept in the data is opportunity cost. It is the consideration of the next best, rejected alternative when making choices. Teachers suggested that students first progress through the concepts of scarcity and choice to grasp the discipline-specific concept of opportunity cost. Scarcity means that the demand for a commodity exceeds its availability, imposing choice upon economic agents. Teacher Franky maintained that scarcity and choice are *'important ideas that students need to learn before understanding opportunity cost. Economics exists because of scarcity due to limited resources'*. He discussed how he needed to clarify the meaning of scarcity because some students could *'take it as something that they do not find in shops; if you find it in shops, then it's not scarce'*. This illustrates how a concept intended to convey a new idea to students may have a different meaning in everyday usage.

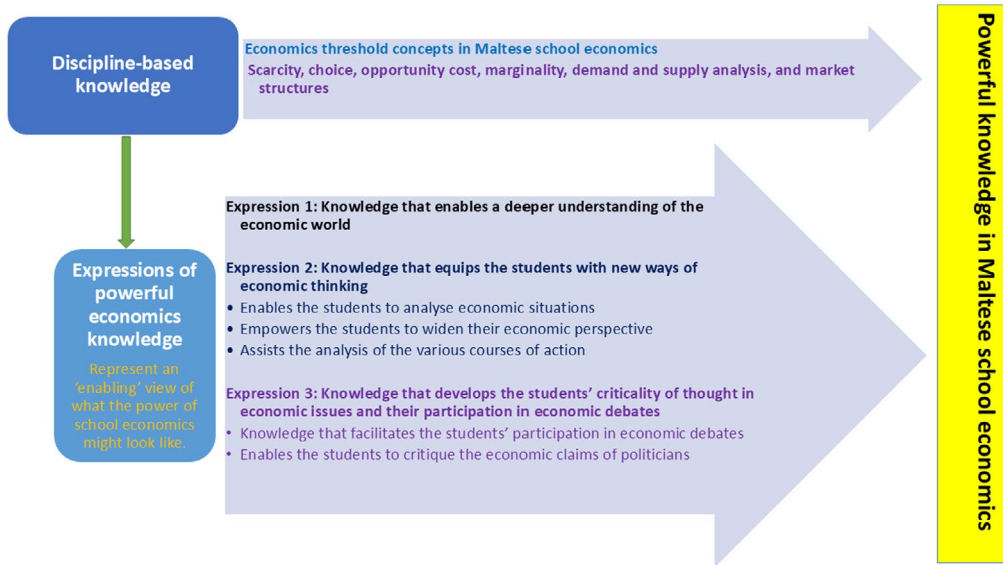


FIGURE 1 Powerful knowledge in Maltese school economics (based upon the framework provided by Mizzi, 2023b).

It highlights the relevance of exploring the students' perceptions of a concept before introducing them to the idea.

Most teachers contended that opportunity cost provided the students with an analytical tool for considering their choices regarding the value of the alternative courses of action. While explaining the PPC, for example, I observed teacher Susan engaging in a discussion with her students, explaining that every choice incurs an opportunity cost. Since most of her students played football, she gave an example of playing a game during an examination period and then failing the examination: *'Consequently, I suffered a high opportunity cost. I must reap maximum benefit from my choice, but at the lowest opportunity cost'*. After some reflection, a student remarked: *'In this case, studying was better because the other alternative cost more'*. This episode exemplifies how relating to everyday experience facilitates the students' engagement with knowledge. Once students grasped the opportunity cost of the choices they needed to make personally, Susan discussed the alternatives incurred nationally, such as the opportunity cost of building roads across the country. She told them: *'We now use opportunity cost to evaluate government policies, such as assessing the costs and benefits of policies vis-à-vis the environment'*. During the interviews, one of her students remarked that he was glad he could make more informed life decisions now that he had learned about the concept of opportunity cost. This can be considered powerful because the student was equipped with an analytical tool that enhanced his agency.

Teachers described opportunity cost as the foundation of concepts such as the PPC, marginality, demand and supply schedules, market structures and comparative advantage. This finding aligns with Davies and Mangan's (2007) assertion that opportunity cost may not be perceived as an independent entity, but rather as nested within other concepts as part of a web of interconnected ideas. Although the concept was usually discussed at the beginning of the course, teachers referred to it when discussing other topics. For example, Claire explained how she *'linked back'* to this concept. For instance, when explaining international trade, she asked her students: *'Why do we have to import certain goods?' ...*

'*Because resources are scarce*'. Claire reminded her students that scarcity and opportunity cost underpinned the economics knowledge they were learning. She contended that grasping these concepts was essential to '*avoid having a fragmented view of economics*'. This quote suggests the integrating function of the threshold concept of opportunity cost, in that by grasping the concept, what formerly appeared to students to be disparate elements can be brought together into a coherent relationship, enabling a deeper understanding of the economic world.

The lesson observations suggest that four teachers emphasised the concept of marginality, which is the idea that economic decisions and behaviour occur in terms of incremental units, focusing on evaluating how much (more or less) of an economic activity. This finding echoes the argument of Davies and Mangan (2007), who propose the concept of marginality as exhibiting the characteristics of threshold concepts. For example, I observed teacher Monica discussing with her students how marginality underpinned the firm's decision regarding the number of workers to employ. For instance, when explaining the graph illustrating the marginal product, she asked: '*Up to which point shall the firm employ workers?*' A student replied: '*Up to the point where the marginal product becomes zero*'. Another student demonstrated a grasp of the idea of the margin: '*As a future entrepreneur, I may argue: "I can employ another worker. However, if I employ him, will productivity be affected?" This consideration helps*'. These two examples from Monica's class suggest the tendency to present economics as void of values (Mizzi, 2023a, 2024a). In this case, presenting human resources as something to be disposed of. Economics education must empower students to perceive firms as conducting their economic behaviour while showing concern for others. This approach can help students understand the discipline's moral and social purposes. Indeed, these were the sentiments of the early great economists.

Nine teachers and five students considered understanding the ideas of demand and supply, as well as market structures, essential. This finding aligns with the literature, which identifies price formation through market interaction as a threshold concept. Teacher Grace maintained that when students grasp these concepts, they better understand the market forces they experience, such as when buying their technology gadgets. One of her students, Jake, explained that since he was considering buying a smartphone, understanding demand and supply gave him insight into the market forces that influenced the prices of various brands. For example, he reflected on the level of competition among firms. By grasping the disciplinary knowledge related to demand, supply and market structures, Jake began thinking in new ways about the smartphone market, enabling him to decide on the best course of action. These effects can be considered powerful.

Teachers contended that grasping the concepts of demand, supply and market structures was a prerequisite for understanding other topics, such as the labour market. Teacher Robert claimed that '*most topics build upon demand and supply. For instance, a student can grasp demand-pull and cost-push inflation when they have already understood a commodity's demand and supply. They are the same thing but in different terms*'. Robert suggests that teachers should ensure their students have a deep understanding of the threshold concepts involved before proceeding to discuss other ideas.

Identifying scarcity, choice, opportunity cost, marginality, demand and supply analysis, and market structures as concepts students need to grasp to progress in their learning is consonant with the threshold concepts literature. These concepts meet the epistemic criteria established by powerful knowledge, enabling students to access critical ways of thinking about the economic world which transform their perceptions. While unaware of the threshold concepts term itself, the data suggest that teachers were conscious of the importance of their students grasping these concepts so that they could become part of the community of thought that has developed the idea.

Knowledge that enables a deeper understanding of the economic world

A common theme from the data is that economics facilitates an economic understanding of issues. This is a form of powerful knowledge advocated by the first expression of powerful knowledge: the knowledge that matures students in economic literacy, being the ability to understand economic events. For example, teacher Mary argued that economics *'stretches the students' experience by helping them to mature in the adult economic world'*. By assisting the students *'in reading the economic world around them'*, she argued that economics facilitated *'their following of the news about the economy, which they could understand better and enjoy the subject more. For instance, by applying the ideas of demand and supply, students can understand why rents are increasing'*. Concurring with two other teachers, Liberata and Grace, Mary contended that this understanding of the real world was being missed by State school students who did not have the opportunity to learn economics. I observed two of her students remarking: *'Miss, we heard that the European Central Bank has lowered the interest rate'*. Later, she explained to me that students often noted economic issues and realised *'that what they are studying is happening'*. In the case of the interest rate being lowered, I observed her discussing the implications for credit and investment, especially if the Maltese Central Bank followed suit. I also observed Mary's students reflecting on the creation of money by commercial banks and the causes of inflation. At one point during the lesson on inflation, she asked her students: *'What happens if the Central Bank prints money excessively?'* She involved them in a discussion exploring the effects of the increase in the money supply on economic activity, specifically that aggregate demand may increase and, given full employment, prices might also rise. The students could broaden their perspectives about the economic issues discussed by being exposed to these ideas outside their immediate environment. This opportunity enabled them to access powerful knowledge they initially experienced as unfamiliar, since they did not have access to it in their families or immediate surroundings.

Most students suggested that economics helped them understand the economic phenomena around them. Student Vince, for instance, considered that if he bought an ice cream, someone was *'organising the factors of production, financing the machines, paying interest on the money borrowed to buy the equipment... It is all part of a complex process'*. Learning economics helped him think beyond the simple act of buying ice cream and reflect on issues related to the existence of a market for the factors of production. Teacher Franky articulated this awareness, cultivated by economics, as *'maturing students into investigating economic issues, realising that the world is more complex than they think'*. Student Dassier argued that he had chosen to study economics *'to understand better what is happening in markets and what the government is implementing and why'*. He referred to economics as *'an actual and current subject'*. In contrast, student Sven contended that some economics topics were irrelevant because *'they studied them in theory and did not occur in everyday life'*. He referred to studying the free market economy, contending that *'this type of economic system cannot be seen'*. While acknowledging that there is no such thing as a free market, teachers can develop an understanding of the invisible forces at work within markets characterised by different levels of competition.

Students referred to economic models as a means to understand economic reality. For example, Dwayne discussed how the idea of a perfectly competitive market helped him to *'understand how the various actors in the market might behave. The model might not happen in reality, but it provides me with insights about the operation of market forces'*. Chris and Kyle referred to understanding more about how the price of shares is established. Chris discussed how he *'used to be curious about the Stock Exchange. I used to say to myself: "What are these prices?" ... Now I understand more about how they are determined'*. These

findings suggest that economics was experienced as powerful because it enhanced students' economic literacy.

Four students explained how they enjoyed tasks that required them to research current economic affairs and statistics. For instance, Luke reported his desire to be provided with '*more local data about the economy that facilitated their understanding*'. Piketty (2014) strongly endorses this recommendation for teachers to use real-world economic data. Economics can then become more contextualised in local, national and international settings.

Students who followed the news facilitated their understanding of the subject. Five teachers mentioned that motivating students to learn about current affairs was the first step in economic understanding. Liberata emphasised that students needed this impetus because they tended '*to live in their world of games and disconnected from reality*'. During her lessons, she tried to persuade them to learn about what was happening in the economy. Then '*they start discussing the news they hear. For example, I ask them: "We are building nationwide. What are the economic repercussions?"*'. Liberata contended that it was important that students realise that '*we do not learn economics in a vacuum but within a context*'. The approach of teachers discussing economic events from the real world positioned economics as embedded in an open social system rather than a closed one, contextualising the subject socially, historically and politically, and in local, national and international contexts. Understanding economic events facilitated students' encounter with economics knowledge that assisted them in moving beyond their current knowledge. This echoes Roberts (2014) and Bustin (2019), who consider the everyday experience in geography education 'as an important resource for teachers to draw upon in the classroom, which should therefore be considered "powerful"' (Bustin, 2019, p. 176). Everyday knowledge should not be dismissed as inferior, but seen as a foundation from which students can access and build disciplinary knowledge. For instance, Vernon (2020) argues that everyday knowledge, when critically engaged and abstracted from, supports the development of a student's 'epistemic Self'. In this view, students' lived experiences serve as a bridge into more complex, systematised understandings of economic phenomena.

The data suggest that learning economics provided students with a distinctive way of perceiving the world through an economic lens. Student Vince discussed how learning economics helped him to consider that '*certain economic decisions had not happened by coincidence but were influenced by unseen forces*'. This implies that his education prepared him to investigate the hidden forces and mechanisms when scrutinising an economic phenomenon. Vince mentioned an example from the location of industry: a weight-gaining firm located near its customers. This is a business in which the final product weighs more or has a higher volume than the raw materials required to produce it. Vince illustrated this by providing an example from the manufacture of machinery from steel; since the end product is bulkier than the raw materials, the firm attempts to locate near its customers to minimise transport costs. Learning economics gave him insights into why weight-gaining firms are located in one place, not another. This knowledge was powerful in that it helped this student understand economic events that were beyond his knowledge and experience. It also enabled him to participate in discussions: '*It is not that people are discussing and I feel disconnected from the discussion. I know what's happening around me and make sense of it with others*'.

These examples suggest that economics helped the students grasp unfamiliar knowledge and develop an awareness of observing and analysing what was happening in the economic world around them. According to teachers Mary and Grace, the latter aspect constituted an important element of an educated person: '*I regard an educated individual as someone who knows how to analyse what is happening around him*' (Mary). This is a form of powerful knowledge that economics can provide.

Knowledge that equips students with new ways of economic thinking

This knowledge represents the second expression of what powerful knowledge in economics might look like. The data sources suggest that it gives students agency by enabling them to critically analyse economic situations, widen their economic perspectives and evaluate the various courses of action available.

Enabling the analysis of economic situations

The data suggest that economics empowers students with ways of analysing economic situations. For example, teacher Robert argued that the subject enables students *'to perceive reality from an economic perspective. Even in life decisions, they learn to be critical and weigh the costs and benefits. This is one of the contributions of economics'*. He emphasised that economics should not be concerned with *'the acquisition of skills'* but with cultivating a way of thinking. For example, I observed him discussing with his students that although opportunity cost is *'a concept learned at the beginning of an economics course, it stays with the individual when making personal decisions'*. He contended that *'someone who has learned economics can be identified from another who has not because the way the person argues and perceives life is informed by their economics education'*.

According to the data sources, some teachers encouraged their students to explore the forces at work in an economic situation, thereby helping them perceive a level of nuance in economics. When discussing leakages and injections in the circular flow of income, I observed a student in teacher Mary's class claiming that *'if injections are greater than withdrawals, then it is a better situation for the economy'*. The teacher told him: *'Let us think. Can we always say it is better?'* A discussion ensued, focused on the words *'It depends...'*, which she wrote at the centre of the whiteboard. The argument was that it depended on whether the economy was experiencing inflation or unemployment. During the focus group interview, student Reuben explained how his teacher, Mary, taught them to explore an economics argument and *'not just reply with a "yes" or "no" answer'*. When a student answered one of her questions, I observed that she asked: *'Raise your hands, those who agree with this answer. Now, discuss why you agree and write a statement. Group together those who disagree. Discuss why'*. I observed the generated discussion, in which students debated each other's ideas. These discussions were recalled during the interview with Mary's students; Reuben maintained that lessons became more engaging. Students could then reflect on the feedback on their ideas and engage more with the economics knowledge involved. The teacher's effort made the students think like economists and develop a critical understanding of the world. These are key economic education purposes (Mizzi, 2023b).

Student Peter discussed his urge *'to analyse what is happening and not just repeat what others, such as politicians, are claiming'*. This was why he had chosen economics: *'I do not want to take things as they appear. For example, if there is unemployment, I analyse what is causing it and what policies the government can adopt'*. This attitude of applying economic concepts to explore economic phenomena and identify the forces and mechanisms causing them is powerful because the student can proceed from a level of reality that they understand to the level of what explains the phenomena.

Empowering students to widen their economic perspective

The data sources suggest that when students began thinking in the subject, they started to perceive issues from a broader perspective. This was done, for example, by encouraging

them to consider aspects relating to planning. For example, student Dwayne argued about deciding *'not to buy something today because it is prudent. I plan, be cautious and buy that commodity later'*. He referred to the government when it *'spends money not only to satisfy the country's short-term needs but also prioritises investing in capital that flourishes in the future, for the benefit of all, such as infrastructure'*. While arguing that students tend *'not to foresee the long term'*, Dwayne claimed that learning economics assisted him *'to visualise the long-term implications of actions'*. This is powerful because students are empowered to reflect on their actions and make informed plans for the future.

Teacher Antonia contended that economics broadened *'the students' economic awareness, particularly by perceiving issues through the pillars of households, firms and the government'*. She exemplified this by discussing the idea of a budget. She first explained to her students the importance of individuals and households budgeting their income and expenditure. Then she discussed the need for firms and economies to budget their finances effectively. She maintained that *'economics helps students acquire a bird's eye perspective: how an issue might affect their parents, businesses, the country and the international community'*. I observed her emphasising that *'our behaviour produces third-party effects'*. This is in line with the data from the teachers' interviews, which suggests that teachers educated their students to reflect on how their choices affected others. Teacher Liberata educated her students to grow from their *'I do not care about what is happening around me'* attitude into an awareness that *'anything that happens affects us all'*. She discussed, for instance, that a market failure leading to an inefficient distribution of goods and services affected all members of society, especially the poorer ones. Liberata echoes Ian's argument, who claims that economics cultivates a 'macro perspective':

Students explore how their micro-decision affects the macro aspect. For instance, they ask: 'Do my buying decisions affect fair trade? How can these decisions improve workers' conditions?' The world improves if we help our students think in these directions.

The research data therefore suggest that economics tends to cultivate a form of reasoning that widens students' economic perspectives, contributing to the development of more thoughtful citizens who can better understand how their actions affect others. These effects can be considered powerful, as students can start to think in ways that were previously inaccessible to them before they began learning economics. Another empowering effect is considering the alternative courses of action available when making choices, as discussed in the following subsection.

Assisting in the analysis of various courses of action

The teachers' voices and observations suggest that teachers educated their students to consider alternatives when making choices. For example, teacher Robert claimed that students could *'use their economic thinking guided by the basic concepts for their day-to-day decisions, assisting them to weigh the benefits and the costs involved'*.

Most teachers mentioned that the concept of opportunity cost helped their students reflect on the best course of action to follow. Antonia maintained that some students needed *'to be shaken into the notion of opportunity cost because they tend to get whatever they want, thinking that there is no cost involved'*. For instance, they needed to learn to distinguish between a need and a want because *'for some, everything is a need, even a want'*. She contended that through the concept of opportunity cost, economics assisted the students in considering *'the other possibilities of time and resources foregone when making choices'*.

This is a form of powerful knowledge that economics offers, especially to young people accustomed to getting whatever they ask for from their families.

Teachers educated their students that there was no such thing as a 'free' good. Franky remarked that *'economics has this aspect of bringing up arguments that may seem silly. Like, for example, buying air'*. I observed him discussing with his students that fresh air *'is usually taken for granted, but we would have to pay for it if we went underwater. We would have to pay to hire the scuba equipment'*. Another anecdote I observed was when a student told teacher Claire that they now had free transportation to school. She replied: *'Free? Who's going to pay for it?'* A discussion ensued, highlighting that citizens contributed through taxation and that these funds could be allocated to alternative uses. These examples suggest that students benefit when reflecting upon considerations arising from the concept of opportunity cost. The benefits reaped can be considered powerful because young people can develop their thinking and cultivate more responsible behaviour. The following section discusses the third expression of what powerful knowledge in economics might look like.

Knowledge that develops students' criticality of thought in economic issues and their participation in economic debates

The research data suggest an implicit acceptance of theory from the dominant neoclassical school of economics. For example, teacher Antonia contended that she liked the 'ceteris paribus' condition because it *'makes economics a science. It is like going to a doctor who eliminates one factor at a time'*. Ceteris paribus is a Latin phrase used in neoclassical economics that means 'all other things being equal'. It indicates the effect of one economic variable on another, provided all other variables remain constant. By considering one factor at a time, Antonia argued that students could reason *'scientifically'*. She brought an example from teaching the demand theory: *'First, we deal with price vis-à-vis demand; nothing else changes. If we add something else, we will get a complicated equation. I tell my students: "Hold your horses!"'* By adopting this approach, she tended to assume that people behaved rationally. However, results could turn out to be far from what was expected. She was, in fact, aware that some students could not digest the logic as proposed by the ceteris paribus condition. For instance, if they wanted to buy a pair of jeans from a certain brand, students could be interested in factors other than the price, such as the style and the advertisements they saw. Antonia argued that since the demand model is two-dimensional, following the ceteris paribus condition, some students could not *'take this logic and argue: "I am used to buying things in this manner, having three variables"'*. Antonia replied: *'OK, but you cannot apply this logic to this economics model'*. It was Antonia's argument that some students *'irrespective of the brilliant teachers they might have, are simply blocked off from economics'*. This example suggests that by closely following a neoclassical model, teachers can exclude aspects of reality that are important to understanding what is happening, rendering economics learning dull. This issue must be explicitly raised in teacher education and professional development programmes.

The data suggest that teachers need to reflect on their potential unintentional immersion in the dominant neoclassical school of economics and their assumption that their students accept this economics knowledge as given. It is also beneficial that other schools of economic thought are considered (Mizzi, 2023b, 2024c). Despite the lack of awareness in Maltese economics education about the dominance of the neoclassical economics orthodoxy, the findings suggest that school economics tends to facilitate students' participation in discussions over a range of perspectives on the economy, assisting them in recognising the political and economic nature of issues. This is an aspect of the third expression of powerful knowledge in economics, which I discuss in the following two subsections.

Facilitating participation in economic debates

The data suggest that by educating students about new ways of economic thinking, economics tends to cultivate an attitude of critically discussing economic issues. For example, students Nicolai and Jack contended that economics enabled them to discuss current affairs by using the concepts they had learned. For instance, I observed them discussing what happens to the price when there is a bumper crop of tomatoes. Their teacher, Grace, claimed that the analytical skills learned enabled the students *'to arrive at their conclusions'*. For example, I observed her asking them: *'Does it always make sense for the state to privatise a state-owned organisation?'* In the following discussion, she urged her students to consider the type of product produced, whether it was a necessity or a luxury, and whether privatisation could create a monopoly. She urged them to *'know the content and argue about it'*. Similarly, teacher Stephen maintained that *'economics students tend to discuss more than other students. They can better support their argument by being aware of scarcity and opportunity cost'*. The arguments of Grace and Stephen suggest an important aspect of the third expression of powerful knowledge: the knowledge that enhances students' critical thinking in arguing about economic issues.

It was challenging for teachers to engage their students in discussions about economic ideas. For example, I observed teacher Grace emphasising: *'You need to provide a reason for your answer!'* When asking *'Does it make sense for the government to increase aggregate demand to affect unemployment?'*, students were first encouraged to explore the existing types of unemployment. This teacher's efforts helped her students consider that, when devising an economic argument, any course of action was contingent on the factors involved in the situation under consideration. She allowed the students to analyse an economic situation and argue about it, allowing them to participate in their learning. This is an expression of powerful knowledge gained through learning disciplinary economics.

Enabling the critique of economic claims

Five teachers discussed educating their students to evaluate the economic news *'objectively, irrespective of their political stance'* (Liberata). For example, Stephen narrated how two Year 11 students from different political family backgrounds discussed the election manifesto of the other party *'with an open view'*. This discussion was characterised *'by a sense of tolerance and open-mindedness. It was encouraging since I have been educating them in this attitude'*. In a similar vein, Mary urged her students *'not to remain puppets on strings. Do evaluate who is telling the truth. Do not take a claim for granted because someone important is saying it'*. I observed her exemplifying this by discussing a situation related to gross domestic product (GDP):

A politician is arguing that GDP went up by 10%. Do explore what the facts are. Money GDP did increase by 10%; it is not a lie. However, when we remove the price increase, GDP increases by 2%. The person is arguing a half-truth. Evaluate whether this politician is using numbers to advance a political agenda.

Another teacher, Grace, reported her students telling her: *'Listen, Miss, yesterday that person said this...'* They would know that the politician made that claim *'for political reasons. They learn to evaluate what they hear'*. Grace concurred with Mary about encouraging young people to evaluate politicians' statements because *'political leaders tend to choose that part of the statistic that's most appealing to them'* (Grace).

The data suggest that economics empowered students to evaluate the economic arguments presented by people in authority positions. This is a form of powerful knowledge that the subject has to offer. It is the knowledge that enables young people to evaluate statistics rather than accept them impulsively, detect faulty arguments or propaganda, voice their opinions and criticise economic policy. Students can mature in their sense of agency, allowing them to take informed courses of action as citizens and potential voters. These are outcomes that can be considered powerful.

CONCLUSION

This paper focuses on what constitutes powerful disciplinary knowledge in Maltese school economics (Figure 1). It is conceived as the blending of economics knowledge gained through understanding threshold concepts with expressions of disciplinary thinking. The paper contributes to the debate about what makes economics knowledge powerful and the powers it gives to students.

Regarding the first approach to conceiving powerful knowledge as discipline-based knowledge, the findings identify scarcity, choice, opportunity cost, marginality, demand and supply analysis, and market structures as concepts that students need to grasp to progress in their learning. These concepts enable students to access critical ways of thinking about the economic world, which transform their perceptions and behaviour. The findings emphasise the concepts of scarcity and choice, which are not included in the framework proposed by Mizzi (2023b). The teachers likely emphasised these concepts to ensure that their young students grasped the concept of opportunity cost that emerges from these notions. They gave prominence to the latter concept, considering it powerful as it equipped their students with an analytical tool that facilitated the development of their thinking and agency.

The findings align with the three expressions of powerful knowledge proposed by the framework concerning the second way of perceiving powerful knowledge. The forms of powerful knowledge in Maltese school economics encompass knowledge that enables students to gain a deeper understanding of the economic world, knowledge that equips them with new ways of economic thinking and knowledge that develops their critical thinking in economic issues and their participation in economic debates. The data's findings enrich the framework by adding depth through examples to each expression of powerful knowledge.

Other researchers may propose alternative visions of what constitutes powerful knowledge in school economics. Ideas about what powerful knowledge in a subject may look like are debatable, and there will often remain scope for strengthening and refining conceptualisations. Further research can contribute in these directions. It may include studies in other countries adopting a methodological approach similar to mine, or research with a more experimental methodology. Future work can also explore whether a distinction between first-order and second-order conceptual knowledge, similar to that used in history education (Chapman & Georgiou, 2021), might offer greater clarity. This division can help distinguish between concepts that explain economic phenomena and those that are necessary to understand the systemic nature of the economy.

Debates about powerful knowledge continue to raise questions about its origins and how it should be identified. For example, is powerful knowledge primarily grounded in disciplinary theory, or does it emerge through lived, contextualised experience? This study suggests that both dimensions matter: theoretical constructs provide structure and clarity, while empirical engagement enhances relevance and accessibility. A key challenge lies in connecting broad conceptual ideals with the diverse realities of classrooms, where knowledge becomes

meaningful through interaction, dialogue and context-specific interpretation. Powerful knowledge is therefore not a fixed canon but an evolving construct shaped by both disciplinary rigour and educational experience.

Teachers, teacher educators and academics need to reflect on what constitutes powerful knowledge in economics to enable young people to think differently about the world, use economics to facilitate debates about alternative policies and realise the subject's potential in classrooms. This paper contributes to this worthwhile endeavour.

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The author declares no competing interests.

DATA AVAILABILITY STATEMENT

Data will be made available on request.

ETHICS STATEMENT

This research was conducted following the guidelines of the British Educational Research Association and was approved by the institutional review boards of the UCL Institute of Education and the University of Malta.

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