

Teaching Operations Management Using Empathetic Discourse, Lessons Learned From Soft Systems Methodology

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This study is an experiential pedagogical account of transferring the use of empathetic discourse and Soft Systems Methodology (SSM) to Operations Management (OM) and Supply Chain Management (SCM) teaching and learning. Lessons learnt from an Effective Management Consultancy module at a UK University, have been used to inform the teaching of a Business Operations Excellence module. Empathy has been used to understand some of the tools and methods used in this module. Recommendations are developed from this approach to supplement OM and SCM teaching through various methods such as stakeholder analysis, case study analysis, and empathetic discourse. Empathy in SSM and OM can help with understanding complex ambiguous human centric problems.

Keywords: empathy, soft systems methodology, complex ambiguous problems, operations management, learning and teaching

INTRODUCTION

This study introduces the importance of Operations management education and the role of empathy in understanding its complexities using cross-disciplinary learning and teaching. The authors of this study have taught SSM to a cohort of postgraduate students and undergraduate students at Aston University Business School, UK over several years. The experience of teaching SSM topics led to the realization that the use of empathy led to better student engagement with the topics learned and understanding of the stakeholders involved in the topics. The proposition of this study is based around empathy and stakeholder management learning and understanding within OM topics. It is understood that the world is faced with complex and ambiguous situations and problems. Students need to use soft skills to navigate this, unlike the hard skills that most subjects teach.

Purpose

The purpose of this paper is to apply empathetic discourse, as used in Soft Systems Methodology (SSM), to Operations Management (OM) and Supply Chain Management (SCM) teaching and learning. The purpose is twofold: understanding the connections between empathetic discourse, SSM and operations management and then sharing the pedagogical approach to implement these findings in the classroom. SSM teaching was delivered in a postgraduate Effective Management Consultancy module. This lesson was

applied to an undergraduate Business Operations Excellence (BOE) module. The following four concepts were used to apply empathetic discourse to this module: 1. definition of a problem which was critical to the overall quality of the teaching; 2. use of the 5 Whys analysis; 3. six hats thinking model by Bono was used to analyse improvements to a process and 4. the use of customer journey maps whilst defining a problem and designing improvements.

Relevance

Empathy enriches the SSM process by ensuring the human side of systems is as important as the technical side (Bentley, 1993). It's about creating solutions that work in theory and real, messy, human-centric environments (Checkland, and Scholes, 1999). The impact of using this approach in the classroom has been seen in summative module assessment. Prior to using the scaffolded empathetic approach there was a 25% failure rate on the module. This reduced to less than 5% over three years. When seeing the positive results from this SSM learning and teaching, the study's authors applied the same learning approach in the teaching of BOE.

In the context of teaching OM, academics are faced with several demographic and institutional forces that combine increasing pressures: to manage pass rates and to do what the market wants, to reduce technical and numerical content, and to abandon existing learning material based on operations (Leseure, 2019). These challenges suggest that new approaches are being implemented to explore the teaching and learning landscape in OM and SCM. The editors of a special issue on how to teach OM, encourage the adoption of experiential teaching methods, business simulations, role-plays, group exercises, live cases, and virtual learning environments, instead of, or in addition to, the more conventional lectures that typically dominate many OM modules around the world (Brandon-Jones et al., 2012). The remainder of this paper is organised as follows: literature related to experiential learning, understanding worldviews, empathetic discourse, social and constructivist theories is discussed in the literature review; the methodology discusses the thinking behind the teaching and learning techniques used with a particular focus on empathetic experiential learning activities; reflections and findings are reviewed and conclusions drawn.

LITERATURE REVIEW

Experiential Learning

Kolb's learning cycle (1984), a popular framework which has been used to improve operations management teaching, highlights four stages (Concrete Experience, Reflective Observation, Abstract Conceptualisation and Active Experimentation) which enable learning to be thought of as a process of a continuous feedback loop. In a study carried out by Boland et al (2011), accounting students from different cultures were found to be more individualistic in their learning and more willing to learn by doing. This principle needs to be taken into consideration in learning and teaching across different disciplines, including operations management. For example, for Concrete Experience in operations management students can engage in hands-on activities such as simulations of supply chain issues, case studies of process improvements and field visits of manufacturing plants. All of which can help with experiencing real-world scenarios. A study by Montesinos et al (2023) showed that students benefited from public participation, transdisciplinarity and situated learning when analysing and redesigning healthcare operations for improvement and optimization in two large hospitals and a university medical service in Mexico. However, this type of learning experience posed a challenge due to the time that needed to be devoted to it.

A study by Liang and Liu (2021) showed that virtual simulations in supply chain management and operations management courses enabled a deeper understanding of concepts amongst students. The discrete-event simulation-based learning model successfully stimulated positive emotions and improved learners' learning outcomes compared with traditional experiential teaching. A different study by May (2022) shows the successful application of a combination of physical or virtual tools to simulate the supply chain operation process between real enterprises in a game-based approach. This helped to deepen students' ability to solve strategical and tactical problems in the real world. However, Lu et al (2021) found that the

integration of technology and education is not perfect, and a number of challenges can emerge, such as adequate technical support needs and the importance of clarifying evaluation criteria.

For a full integration of Kolb's Learning Cycle in operations management teaching it is important to ensure a balance of all four stages of the cycle in lesson planning, continually provide constructive feedback to help students to refine their understanding and skills together with fostering an interactive environment so that students can actively participate and share experiences.

Understanding Worldviews

Understanding worldviews in relation to operations management learning and teaching is important as it shapes how individuals and organizations approach problems, decision-making, and strategies. A worldview is a broad perspective or belief system that influences how people perceive and interact with the world (Checkland and Poulter, 2006). Awareness of worldviews in operations management allows organizations to operate more inclusive, thoughtful, and adaptive, ultimately leading to more effective practices and learning outcomes. Operations managers who are aware of their worldview can more effectively lead and manage change in organizations by considering the broader implications of decisions on employees, customers, and the environment. Concerning learning and teaching, it fosters a deeper understanding of how different cultural, societal, and individual beliefs shape business operations, learning styles, and management strategies.

Rousseau and Billingham (2018) proposed a worldview inquiry framework to help with eliciting, documenting and comparing the worldviews of stakeholders, which can sometimes be difficult to define. Hermanto et al (2021) recognise that failing to capture relevant worldviews can result in difficulties in formulating accommodations. In order to address this, they put forward the 7-S framework as an auxiliary tool to assist those that are new to SSM in determining relevant worldviews for action to improve in a time-constrained situation. A study by Stadler Benz and Stauffacher (2023) further refined the notion of worldviews by identifying the national, long-term and local and short-term worldviews as a way of helping to understand the different worldviews of actors.

Empathic Discourse

Operations management education balances technical knowledge with soft skills, including communication and empathy, which can be critical in fostering collaborative and effective team dynamics. In the context of operations management, where the subject matter often involves complex problem-solving, systems thinking, and decision-making under constraints, empathic discourse can have a number of benefits. Empathic discourse in operations management education creates a better learning environment and equips students with the emotional intelligence to manage interpersonal dynamics and complex problem-solving in real-world operations settings.

With a changing global economy, organizations face an increasingly complex, volatile, unpredictable, chaotic, and ambiguous (VUCA) business environment. The importance of soft skills has been mentioned as a crucial factor to thrive in the workplace. The knowledge of content is less important, since it is important to be able to adapt to new situations (Fioravanti, 2020). Empathy is one of these soft skills, that could be developed and used in a classroom setting. The term soft skills have been around for many decades. It has been used to describe the emotional aspects of human skills, empathy, creativity, resilience, and collaboration, in contrast to the knowledge work and technical competence that represent hard skills (World Savvy, 2022). Relevant classroom materials need to ensure inclusivity and encourage students to explore diverse perspectives and lived experiences.

Empathy in Higher Education remains a topic that has limited research. Empathy is a term used to describe a wide range of emotions and experiences. Emotion researchers generally describe empathy as the ability to sense other people's emotions and the ability to imagine what someone else might be thinking or feeling (Cannon, 2023).

Emotional intelligence in leadership and management has long been advocated (e.g. Goleman, 1995) which can help to improve communication and decision-making in operations management. Freeman's stakeholder theory (Freeman, 1984) outlines the need for understanding diverse stakeholder perspectives.

Although it does not specifically address empathy this theory can align with the idea of empathic discourse in operations management education.

Kolb (1984) discusses experiential learning, which often includes collaborative discussions, and how this learning style can be applied in operations management education to enhance empathy and understanding. Landler-Pardo et al (2022) present the Empathic Patterns in Interpersonal Communication (EPIC) practical tool. It offers a new approach to developing awareness of cultural differences and diversity. However, this is focused on teachers' socio-emotional learning in terms of refining their communication and emotional skills rather than application to Soft Systems and operational management teaching.

Social Learning Theory

Empathic discourse draws on elements of Social Learning Theory (Bandura, 1977) and Constructivist Theory (Vygotsky, 1978). Social Learning Theory emphasizes the role of observation, imitation, and modeling in learning. Empathetic interactions between teachers and learners can serve as powerful models for positive social behaviour. Applying Social Learning Theory could enhance how students learn and engage with complex topics in operations management. Group projects, case studies, and peer-led discussions foster social learning where students collaborate, exchange ideas, and learn from each other's strengths and weaknesses. Operations management often involves practical, real-world challenges. Students can observe the consequences of various decisions by simulating scenarios such as demand forecasting, inventory management, or supply chain crises. Students learn by observing the outcomes of others' actions which helps them internalize complex concepts. Group-based learning has been shown to assist with motivation (Gillies, 2003) and promote academic achievement (Gillies and Boyle, 2011). Johnson et al (2014) note that higher education institutions increasingly use collaborative learning groups to equip students with teamwork skills, which are highly valued in the professional world.

Constructivist Theory

Constructivist theory (Vygotsky, 1978) highlights the importance of learners constructing their own understanding and knowledge of the world through experiences and reflection. Empathetic discourse supports this by acknowledging and valuing students' perspectives and experiences, thus facilitating deeper learning. Role based learning in face-to-face contexts has been seen as a powerful approach within further and higher education contexts (Wills, et al. 2011). As role plays are conducted in a controlled environment, they can allow learners to practice real-life situations and develop their skills in a safe environment (Bransford et al., 2000). When students work together on role plays collaboration and communication skills are utilised (Fioravanti et al., 2002). Short (2016) explores the use of a role play serious game that enabled students to be operational managers. Students gave positive feedback of immersing themselves in the game and gaining business experience. However, using a game for such purposes could be addictive.

Empathy and Soft Systems Methodology (SSM) are interconnected concepts aimed at addressing complex, human-centered challenges within organizations and communities. Research indicates that during debates, stakeholders may use their worldviews to frame disagreements and stress the importance of tackling issues from multiple angles (Houghton, 2012). Initial findings suggest that empathy enables practitioners to genuinely understand these stakeholders' emotions, needs, and concerns, resulting in more accurate and inclusive root definitions and models.

METHODOLOGY

The Methodology focuses on the author's teaching of two modules, namely Effective Management Consultancy and Business Operations Excellence. For the Effective Management Consultancy module students choose a social or business issue to explore SSM and understand complex and ambiguous problems. The class consists of international, and UK based students who are on a MSc Business Analytics programme. The seminar size is 50 students. Many students choose OM topics such as Brexit's impact on UK supply chains or the risk of global trade barriers on UK manufacturing and OM. The realisation that SSM could be used to understand OM and SCM issues, led to exploring this in an OM context. Many

problems that are complex and ambiguous are based around human centric issues. Thus, empathy is a good approach to understand the problems around the stakeholders involved in the problems.

SSM will be used in this study as a lens in which to understand complex ambiguous problems in the classroom. Research has proven that academia or business schools have not readily adopted SSM and interdisciplinary approaches (Cezarino, et al. 2016). The SSM pedagogical approach crosses disciplines from systems thinking to business management and OM. This paper will share the experiential accounts on the delivery of the methodology. A postgraduate module taught, will be used to understand empathy and SSM then applied to OM teaching. Checkland states any intervention should consider the views of all stakeholders and the solution must come from the people involved in the problem situation (Checkland and Scholes 1999). Being empathetic to the stakeholders in the problem situation enrich the SSM approach further. This will be explored in the context of teaching BOE.

SSM, developed by Peter Checkland in the 1970s (Checkland, and Poulter, 2006), addresses complex, poorly defined problems, especially in social settings (Nair, 2015). Unlike hard systems methodologies that depend on quantitative data and assume systems function predictably, SSM accepts the uncertainty and diversity of human systems (Wilson, 2001). Appreciating the central role of meaning in social interactions is important as it shapes how people communicate, form relationships, and make decisions (Armstrong, 2019). Empathy involves recognizing and understanding the feelings, thoughts, and perspectives of others (Guthridge, and Giummarr, 2021). In the context of problem-solving and systems thinking, empathy plays a crucial role because it allows practitioners to consider the experiences and needs of various stakeholders. This understanding can lead to more effective communication, collaboration, and solutions that are better aligned with the real-world. Tentative findings from the context of teaching SSM, show that an empathetic approach allows participants to understand the SSM methodology, and in turn the complex situation much better than a theoretical perspective.

When illustrating the problem situation through rich pictures, empathy helps capture the emotional and relational aspects of the system. This ensures that the diagrams reflect technical details and human elements. Creating a 'rich picture' to visually represent the situation highlights various stakeholders, issues, and concerns, fostering empathy by encouraging the consideration of multiple viewpoints. Conceptual models are developed based on root definitions to show how the system should ideally function. Empathy ensures these models are efficient and considerate of the human experience, leading to solutions that are more likely to be accepted and implemented by those involved.

The success of teaching SSM to a cohort of students on an effective management consultancy module helped to motivate this study. Since the links between empathy and SSM have been established, they need to be transposed to the classroom. Complex ambiguous problems are analyzed, whether social or business issues, through the application of SSM. Students are asked to be empathetic to the stakeholders. The students interview each other in pairs. One student is the stakeholder, and the other is a consultant. This helps tease out the worldviews and multiple viewpoints of the stakeholder. This empathetic approach was adopted and used in BOE.

Empathetic Experiential Learning Activities

The BOE module uses the six sigma DMAIC approach: Define, Measure, Analyze, Improve and Control, to analyze an organization of the student's choice using tools and techniques associated to the approach (Basu, 2004). The first tool taught to BOE students was the Critical to Quality Tree tool in the Define stage. The students worked in groups and asked each other what was critical to quality to them in relation to a selected organization such as Tesco or Greggs, or other customer-focused organizations. These empathetic discussions helped the students to step into the customer's shoes and create measurable metrics that defined the customer's performance requirements. Examples that the students found included the acceptable tolerances to queues, the acceptable number of staff per store serving customers and the acceptable number of items on a menu etc. These metrics were specific to the customer journey. The customer journey was then mapped in a flowchart or process map. This was again based on empathetical understanding of the customer's journey. Students in pairs questioned each other to get to the customer's

specific journey. The Measure stage was based on data collection in relation to the CTQ analysis. Observation, online reviews and a SERVQUAL analysis (Foster, 2017) was used to gather data.

This was followed by the cause-and-effect analysis and 5 Whys analysis (Basu, 2004). The 5 Whys method and empathetic discourse can be powerful tools when combined. The 5 Whys is a problem-solving technique that involves asking "why" five times to get to the root cause of a problem. By integrating empathetic discourse, you can understand the root cause based on the customer perspective. An example of long queues could be broken down into the 5 whys as follows: Why are there long queues at Tesco? Because there are not enough checkout counters open. Why are there not enough checkout counters open? Because there are not enough staff available to operate them. Why are there not enough staff available to operate them? Because the store has not scheduled enough employees. Why has the store not scheduled enough employees? Because of the store's poor management. Why is the store's management poor? Because they have no idea of customer demand. This root cause is based on the perspective of the customer.

In the Improve stage, the Six Hats method helped the students brainstorm organizational improvements (Bono, 2016). Empathetic discourse and Edward de Bono's Six Thinking Hats are both powerful tools that can enhance decision-making, problem-solving, and collaboration in various contexts, including the classroom. The students use the Six Thinking Hats method to explore different aspects of the problem solution. During the analysis, students, incorporate empathetic discourse by actively thinking about the customer within each six hats framework. This combination leads to a more holistic understanding of the problem and more effective, inclusive solutions. Students were asked to contextualize the solutions through the DMAIC process by assessing them with the six hats. Empathy in these hats were based on the descriptions and how the students viewed the solution based on the customer and hat. Reducing the queues at a local Tesco supermarket was one such contextual example and the considerations for each of the hats is shown below.

- White Hat: Encourage sharing of information while understanding the emotional context behind data. This ensures that the information is accurate and relevant to stakeholders' concerns. Queues reduction could be based on observations of data collected in the store. How would the customer feel to focus solely on the facts?
- Red Hat: Promote the expression of emotions and intuitions in a safe and supportive environment. Empathetic discourse ensures that students step into the customers shoes and share their feelings, which can provide valuable insights into the problem. Will the customer be excited by small queues or have bad feelings based on the queue size?
- Black Hat: Consider potential risks and problems with sensitivity to stakeholders' fears and concerns. Empathetic discussions can help understand customers fears and find solutions that minimize negative impacts. Impacts on queue reduction and relating it to the quality-of-service delivery highlighted by small queues may be one concern.
- Yellow Hat: Identify benefits and positive outcomes while acknowledging and valuing stakeholders' hopes and aspirations. Empathy helps in students understanding what positive outcomes mean to different customers with reduced queues.
- Green Hat: Foster creative thinking by creating an environment where all ideas are respected and considered. Empathetic discourse ensures that customers are happy with innovative ideas. The positive impact of reduced queues could be explored in the customers shoes based on creative ideas such as click and collect services.
- Blue Hat: Manage the thinking process focusing on inclusion and respect for all perspectives. Empathetic discourse helps students to explore discussions, ensuring that the Blue Hat ensures that all perspectives are considered, including the emotional and intuitive insights from the Red Hat.

In summary, integrating empathetic discourse with the Six Thinking Hats method can enhance decision-making by ensuring that all perspectives are considered, emotions are acknowledged, and a supportive environment is maintained. The students then applied the solutions found through DMAIC analysis and designed another customer journey map, based on empathetic understanding of the customer journey with

customer focused solutions. Thus, in the Control stage, the before and after implementing customer journey solutions can be compared.

REFLECTION AND FINDINGS

Student engagement with this form of empathetic learning was considerably better. Observing the students and qualitative formative feedback from students in the BOE classroom, suggest that this approach could be used to supplement but not replace traditional OM learning and teaching approaches. The effectiveness of these activities in improving students' understanding of OM concepts was found in the improvements in the quality of the summative assessment after the module.

When asked about the journey using empathy, students shared feedback suggesting their understanding of the topics improved when using this technique. The students also enjoyed the interactive sessions whilst studying the topics. They enjoyed working in teams to use empathy to understand stakeholder's perspectives.

The suggestions going forward are as follows. Understanding OM and SCM stakeholders through the lens of empathy can significantly enrich the learning experience in the classroom. Here are some strategies and points for effectively teaching about supply chain stakeholders with an emphasis on empathy:

Understand Supply Chain Stakeholders: Begin by identifying and defining the various stakeholders in an OM supply chain, including suppliers, manufacturers, distributors, retailers, customers, and logistics providers. Discuss their roles and interdependencies.

Apply Empathy Mapping: Use empathy mapping exercises to help students identify and understand each stakeholder's needs, motivations, challenges, issues, and concerns. This method encourages students to step into the shoes of others and explore different perspectives (Reality Pathing, 2025).

Case Studies with Stakeholder Perspectives: Present case studies highlighting specific supply chain issues. Ask the students to analyse these cases from the perspective of different stakeholders. Facilitate discussions about how decisions impact each group and the importance of considering their viewpoints.

Role-Playing Activities: Organize role-play activities where students adopt the roles of various supply chain stakeholders. By simulating real-world scenarios, students can experience firsthand the challenges and priorities of different players in the supply chain.

CONCLUSIONS

This study has applied lessons learned from SSM analysing complex and ambiguous problem situations. A review of the literature found that teaching and learning OM can be based around experiential pedagogies. The challenges of teaching OM with pressures to supplement other cross-disciplinary learnings has proven conducive to exploring SSM learnings and applying them to OM teaching and learning. Alongside gamification, role plays, active case studies, the use of empathy and discourse in the classroom allows students to really understand the issues and concerns of the stakeholders.

The practical applications of the findings for educators in OM include stepping back from traditional lectures and try and supplement with experiential learning. Whether by understanding empathy through defining OM stakeholders, empathy mapping, perspective case studies, or role-playing activities. The learning from this study suggests that empathetic discourse in the classroom is conducive to getting into the stakeholders' shoes and understanding OM topics based on this.

The limitations of this study include the absence of tangible assessment on how the use of empathetic discourse can be proven to improve the understanding of OM by the student sample. Although grades have improved and feedback from students was good, a more rigorous quantitative study would be able to analyze the specific learnings and topics going forward. Therefore, suggestions and areas for further investigation could be by doing a before and after analysis based on OM topics. A before would apply the OM topics to the student sample, then get feedback on how well they understand the topics. Then empathetic discourse would be used in the learnings, followed by an after analysis on how well they understood the topics. This analysis could be via a survey, or interviews.

Integrating empathy into SSM and OM enhances the understanding of complex ambiguous problems and improves the effectiveness of collaborative efforts to create meaningful, lasting understandings. Facilitating systems to hear and understand the stakeholder's voice can increase the quality of communication and understanding (Walker, and Maqsood, 2014). This study has explored the literature and methods around using empathy to understand OM topics. This empathetic discourse allows students to sense, feel and understand the stakeholders and how they relate to the topics being learned. Social learning and constructiveness learning point us to these experiential exercises in the classroom. This is supported by research around Kolb's reflective learning in the classroom. The learnings from this study can help shape deliveries of traditional OM topics with a focus on stakeholder's perspectives. In a messy, complex and ambiguous world, using empathy and soft skills are more and more important to navigate and supplement the hard skills that students are traditionally taught.

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