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**SCENARIO-BASED ASSESSMENT  
TASKS TO DEVELOP EMPATHY:  
REFLECTIONS ON TEACHING SOFT SKILLS**

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## SCENARIO-BASED ASSESSMENT TASKS TO DEVELOP EMPATHY: REFLECTIONS ON TEACHING SOFT SKILLS

John Mumford

### INTRODUCTION

Information Technology (IT) students take a core compulsory course in the Fundamentals of Information Systems Development as part of the Bachelor of Information Technology (BIT) at the Southern Institute of Technology (SIT). This course aims to assist students in developing the knowledge, skills, and understanding of information systems development, which in turn will enable them to provide organisational IT solutions, including interface design elements, and improve systems and processes. For students to meet these broad aims, they need to analyse the various key aspects of information systems with a view to studying business processes provided in an assessment scenario for a small IT business.

The demand for soft skills from employers of IT students as they join the workforce continues to be high. Galster et al. (2023), for instance, found that “in New Zealand in particular the Digital Skills Forum identified the importance of soft skills and ranked problem solving skills, creative thinking skills, communication skills, collaboration, creativity and presentation skills as most important” (Galster et al., 2023, p. 10).

The main components of IT systems are people, procedures (or processes), hardware, software, the internet, and databases and data. People are a central part of any IT system, whether they are system developers, employees, or customers as end-users of the system. Thus, soft skills form an essential component of the professional development of IT undergraduates, as such skills are required in their eventual work contexts. Galster et al. (2023) maintain that “software development is a human-centered activity” (p. 1). Moreover, despite the increasing prevalence of Artificial Intelligence (AI) and chatbots, many end-users prefer to interact with a real human being, rather than an artificial system, because “AI systems, despite their remarkable ability to process vast amounts of data and perform tasks that appear ‘intelligent,’ lack the subjective consciousness that characterizes human knowledge” (Yildiz, 2025, p. 5).

This reflective article outlines the teaching approach forming the basis for a lesson on fundamental information system development, students’ responses, teacher reflections, and ways of connecting with the needs of individuals within the context of the BIT at the Southern Institute of Technology.

This course aims to help students to navigate systems analysis theory and practice by completing theoretical and practical assessments, involving the production of an analysis report together with a simple database. Systems analysis commonly involves gathering system requirements from scenarios, creating models of the system, designing software solutions, and testing and implementing the finished designs. Rao (2018) found that “soft skills represent a dynamic combination of cognitive and meta-cognitive skills, interpersonal, intellectual and practical skills and ethical values” (p. 216). Thus, the development of such skills can aid students to respond to varying situations in a positive manner to address technical and social challenges in their professional lives.

## CONTEXT AND CONTENT

In the context of IT education at degree level, computational thinking typically includes several aspects that can be linked to soft skills. Dolek et al. (2017, p. 4) identify five computational thinking competencies: algorithmic thinking, cooperativity, creativity, critical thinking, and problem solving. Teaching soft skills, especially cooperativity and creativity, in IT courses typically involves students delivering oral presentations and being required to contribute to class discussions. Facilitating creativity in particular is commonly achieved through Project Based Learning (PBL) (Marnewick, 2023). Multiple solutions to the issues in a scenario are encouraged, including non-technological ones, such as changes in operating processes and efficient use of existing, and often unused, software features. Creativity may also involve empathy. Depow et al (2021, p. 1198) have found that, despite the challenges of defining empathy, “many researchers think empathy involves sharing someone’s emotion (an emotional process), taking someone’s perspective (a cognitive process), and feeling compassionate and wanting to help (a motivational process).” Thus, the development of empathy may also be facilitated through working collaboratively on small business IT scenarios, where the student is guided to think about the business scenario from the workers’ point of view and becomes motivated to offer help in the form of organisational and technological solutions. Interestingly, Jami et al. (2023, p. 2) observe that “empathy is not only possessed but may also be achieved through interaction between individuals in a given context.” Thus, in the business scenario context, students and teachers can both manifest and apply empathy to clients’ needs.

Realistic fictitious scenarios, which may be purely represented in textual form, can form the basis for teachers to encourage empathy in the students as they engage in their analysis of the requirements for a proposed set of technical and organisational solutions. If the scenario content includes a sufficient range of users, system components, business contexts, and identifiable issues, it can provide a setting for the analysis to occur and for the students to think about the users and the issues that they face. If textual descriptions are detailed enough to provide information about business processes, staff roles, and difficulties faced by the IT company in the scenario, this can help students to perceive the people in the scenario as human beings in need of their help. Mohammed and Ozdamli (2024) observe that “the most prominent features of soft skills are emotional awareness, positivity, interaction, people management, conflict management, strategic thinking and fast learning skills” (p. 2). Students who experience teaching and learning contexts from personal perspectives engaging the capacity for empathy are more likely to gain deeper appreciation of the connections between soft skills and their future working lives.

## INFORMATION SYSTEMS ANALYSIS TEACHING

The session occurred on a weekday morning in the classroom with 30 students. The class comprised young adults with a range of previous knowledge of computing and use of information technology in employment contexts. A rich pool of such experience could be drawn upon as we navigated our way through the course, informing my teaching of information systems development to connect the students’ experiences to those of the individuals described in the IT system scenario. Some students might be revisiting semi-familiar material from their prior work or school experience, and others would be recommending education after some years in the workforce and perhaps had never dealt with this topic in a tertiary academic setting. This was an ideal opportunity to present the material with a questioning approach from the outset, foregrounding critical thinking, to enhance student engagement and make theory and practice more logically and personally connected.

It was also a situation to foreground the students’ life experiences as a key part of the learning process in the classroom. Students who are more familiar with IT and building software solutions, often as part of computer hobbies, might question why one would need to know about soft skills. It is not uncommon for IT students to assume that they will mainly be engaged in technical tasks, with perhaps a relatively small amount of time required of other subjects. Ivory et al. (2024) found that “broadly speaking, students are seen to hold misconceptions about soft skills and typically prefer to prioritise technical knowledge acquisition over soft skill development, which

is particularly evident for students with technical career aspirations" (p. 4). Students who have had real world experience of working in teams within their employment, would bring with them a questioning approach to their course of study, based on their life experience. They might ask, "why do I need to learn this? Don't clients just want their IT problems solved? Why is there so much emphasis on soft skills?"

In the IT industry, popular Agile methodologies such as Scrum include Sprint Review and Sprint Retrospectives, involving substantial reflective opportunities for the software teams (Shwaber & Sutherland, 2020). In addition, the Agile manifesto contains a set of principles which incorporate the importance of interactions between business people and developers, and between IT team members (Beck et al., 2001). For example, the manifesto (2001) states that "Business people and developers must work together daily throughout the project" (para. 4), and "the most effective method of conveying information to and within a development team is face-to-face conversation" (para. 6). Notably, the Agile manifesto was constructed in an era where social networking and mainstream use of AI systems were not accessible. Students in the 2020s live a very different world.

Today, AI Chatbots such as ChatGPT and Claude may facilitate an alternative, efficient means of task and response interaction, using instructions in the form of textual prompts to complete almost any type of task. Chatbot developers aim to make such communication feel more like a conversation with a person than a routine interaction with a machine. The key components of a chatbot prompt can include a task, a context, an exemplar, a persona, a format, and a tone. How many of these are present will depend upon the user's particular needs at that time. AI personas aim to imitate human traits and can play a role in the interaction, much as humans might role-play. For example, a chatbot can be instructed to behave as an irritated customer, or critique the interaction's content. Therefore, AI chatbot personas can be used to help IT professionals to better understand the needs of end-user in requirements engineering (Wang et al., 2025).

However, there are common risks associated with the naive use of personas to 'talk' with a chatbot, including the reinforcement of stereotypes. Venkit et al. (2025) identify several frameworks of harm ranging from dehumanisation to exoticism. Salminan et al.'s (2024) research involving subject matter experts found that "LLMs can generate consistent personas perceived as believable, relatable, and informative while containing relatively low amounts of stereotyping" (p. 1). Despite this, such AI systems are based on algorithms which continually try to second-guess the user and adapt to the data provided. Risks such as confirmation bias still exist, and some chatbots have been shown to provide any answer that fits what the user wants, irrespective of its truth or ethical basis. In recent times improvements are being made to mitigate these risks. For this session on empathy and soft skills, a *kanohi ki te kanohi* (face to face, in person) approach was adopted as most effective.

The lesson commenced with a greeting: *Tēnā koutou, tēnā koutou, tēnā koutou, katoa* (Welcome everybody). The learning goals and structure for the session were laid out on the whiteboard, the tutor ticking off each stage of this schedule as they were completed. The main parts of this lesson were arranged into four sections. AI was not initially used during the described lesson to allow the teaching of soft skills to proceed at a natural pace with minimal distractions.

The first section involved asking the class how they would define soft skills. After an appropriate time for reflection and response, the students' verbal responses were shared, and this prepared the class for building on prior personal knowledge and making connections between the scenario-based assessment and real-life. The resulting perceptions related well to an official definition of soft skills. Often, students added important observations that soft skills, while a vital part of social skills, are not always easy to develop, and that certain individuals tend to be more oriented towards these aspects of IT work than others. The students broadly agreed that listening to customers and trying to relate to their situations was also important but often challenging to do effectively.

Analysis of an assessment scenario requires careful reading, discussion, asking questions of the teacher, and the application of some creativity. As discussed earlier, textual descriptions of simple small-business scenarios provide

a simulated space for students to probe and identify key elements of IT systems. They also provide an opportunity for students to imagine themselves in this situation and try to sense which challenges most IT system users might face, even if these are not always explicitly stated in the scenario. These scenarios were presented in the first part of the lesson, and class discussion developed. The teacher then guided the students how to distinguish between the various elements of an IT system within the scenario, and to identify what information was provided, and what information was not explicitly provided, in the textual description but what could be formulated through reasonable assumptions, given the context. Such assumptions were discussed and validated as would be typical IT practice in business contexts. A focus on the people element of an information system was encouraged, since these systems are meant to serve their users' needs. Engaging the students' creativity and imagination—and, on occasion, humour—naturally led into the second part of the teaching session.

The second section involved the core learning activity for this lesson: an initial identification of the key stakeholders, IT system elements, organisational roles, and issues facing the simulated business. Commercial software, such as Microsoft Windows and Office 365, was specified, with minimal information about computer hardware less than five years old. As discussion ensued, broad agreement was reached between the formal use of soft skills, content, and everyday life and business contexts. Some specific information was intentionally omitted by the teacher to allow the teacher to act as the 'client' for the organisation. This approach provides a rich opportunity to prompt students to ask, research, negotiate, and make justifiable assumptions.

The justification process for such assumptions involves critical thinking skills. This teacher-guided imaginative process proved challenging to many students. Some students observed that making assumptions, even if justified, is not a substitute for facts. On the other hand, providing all the facts in an overly dense and lengthy textual scenario might overwhelm those students who are poorer readers. Including images from the IT scenario also tends to inhibit creative processes and the active engagement of the student's imagination. Upon deeper, and more deliberate reflection by the students, the narrowing of the perceived distance between what was explicit in the scenario and their key assumptions, became more evident, signalling this reflection as a relevant and very worthwhile activity. For certain individuals, this creative process produced moments of clarity, thus reducing the perceptual distance between the course assessments and their everyday lives. Valuing and drawing on students' existing knowledge, experience, and identity is a fundamental principle in effective teaching (Ministry of Education, 2018). In addition, constructivism is founded on the premise of building knowledge through joining new knowledge with what learners already know (Bada & Olusegan, 2015). Notably, Berryman et al. (2018, p. 7) found that responsive pedagogy "begins with listening—such that listeners are as actively engaged as the speaker in seeking to make their own sense of what is being said." In this way, educators "value and legitimise multiple views of knowledge and ways of knowing" (Berryman et al., 2018, p. 7).

The third section of the lesson involved asking the students to take this initial creative analytical activity a step further, by starting to draw on the content and activities in the other papers of the course as a way of broadening their perceptions of information systems analysis and development. The session involved the tutor asking questions about what topics they were studying in their other courses, and how these might relate to the key phases of information systems development. The other required courses for the first year of the BIT were Fundamentals of Programming and Problem-solving, and Fundamentals in Project Management. For example, the hardware course provided the students with a clear idea of the minimum required technical specifications for commercial systems to be useful.

As the students were provided with ample one-on-one time with the tutor, where empathy for the people identified in the business scenario was modelled, the connections between their life experiences, information systems development, and other topics started to develop. Working alongside each student evoked some very thoughtful reflections and responses, reducing the stress of trying to find, or construct, an example information system specification to complete the class activity. In addition, this integration of knowledge enhanced the students' appreciation of the BIT's interlinked areas of relevance, despite the range of topics being taught by different tutors,

with different tutor personalities and emphases. Drake and Reid (2018) identify multiple benefits of connections across subject areas including leveraging existing resources, conveying teachers' awareness of what the students are learning in other classes, and deepening of students' concepts.

The fourth section focused on reviewing and summarising the key points of the lesson. This involved the tutor reviewing the main concepts and information system development terminology presented. The students were invited to share their perspectives on how meaningful the session had been, what aspects of the session were easier than they had expected, and what parts had been more challenging than they had initially thought. Some final class discussion ensued with a recognition of the benefits of imagination and creativity in developing soft skills in relation to an information systems development course assessment. Finally, as the lesson concluded, the tutor acknowledged the benefits of reflecting on the creative process as part of the ongoing life journey to develop empathy for others and how this process is necessary for effective teaching sessions. The teaching session can be seen from an experiential learning perspective, where concrete experience informs reflective observation. The reflection can be developed into abstract conceptualisation, leading to further active experimentation. Finally, this experimentation can motivate the learner back to initiating further concrete experiences (Kolb & Kolb, 2017, p. 11).

## CONCLUSION

SIT has a strong focus on vocational education and training. Qualifications in IT aim to develop technical and soft skills for further study or employment. The facilitation of deep reflection in teaching and learning at SIT engages students to challenge themselves and their often-hidden assumptions about the relevance and value of soft skills education, the concepts that are needed for a strong grasp of IT system principles, and the dispositions towards customers that accompany them. It is vital in this AI era, where chatbots start to play the roles of requested personas, that we maintain a critical stance on the development of empathy in our students through the application of in-demand soft skills during scenario analysis. This article has outlined some of the teaching and learning approaches to developing soft skills with personal reflection foregrounded, and offers reflections on various perspectives about the connections between information systems development and everyday life. Not only did the students pass the fundamentals of information systems development course, which is compulsory, but it prepared them for further study in the BIT courses that follow. Thus, the students could build on these foundations when navigating Agile-derived methodologies and more advanced systems analysis course content in future years of the programme. The students developed reflective skills to take with them on their academic or employment journeys. In addition, through sharing teaching and assessment materials in our organisational repository, other lecturers could be supported in their efforts to incorporate scenario analysis, and the critical importance of developing empathy through soft skills development. This was achieved by the teacher and students collaboratively building the foundations of information systems analysis, drawing on the wonderful potential for human empathy, the benefits of an integrated curriculum, and the application of responsive pedagogy, within the context of a degree course in information technology at SIT.

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