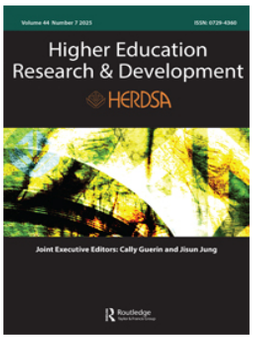

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Developing an evidence-based pedagogical framework through investigation of current practice in teaching employability skills inherent to online groupwork

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ABSTRACT

Teaching implicit employability skills in higher education is challenged by the dearth of scholarly literature and institutional structures promoting and supporting a common pedagogical approach. A need to gather empirical evidence of current pedagogical approaches exists so that a pedagogical framework can be developed to support teaching academics in their design and facilitation of integrative teaching. To achieve an empirically evidenced framework this research employs a grounded theory methodology to examine the teaching of online collaboration (online groupwork) skills in the context of online undergraduate business programs. This paper reports on pedagogical content knowledge data analysed from in-depth interviews of online teaching business academics. Pedagogical concepts and related strategies are discovered, educational theories supporting pedagogical concepts are discussed, and a framework is proposed.

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Pedagogy; online/virtual groups/teams; online/virtual collaboration; employability skills; higher education; business; groupwork; teamwork; implicit learning content

Introduction

Employability skills are defined as '… skills required not only to gain employment, but also to progress within an enterprise so as to achieve one's potential and contribute successfully to enterprise strategic direction' (Australian Department of Education Science Training, 2002). The Australian federal government implemented legislation, requiring both vocational and higher education sectors to address employability skills to achieve students' holistic development towards employability (Australian Department of Education Science Training, 2002). The Australian Universities Accord's Final Report asserts the need for universities, industry and business to do more to assist students develop generic skills (Australian Universities Accord Review Panel, 2023). The national policy for regulated qualifications in Australian education and training supports this legislative requirement (Australian Qualifications Framework Council, 2013, p. 49).

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Fundamental to meeting bachelor's degree AQF Level 7 knowledge, skills and practice requirements, and in parallel with developing employability skills and knowledge, further pedagogical intention is required to ensure metacognition and articulation of individuals' own online groupwork behaviour. However, a search of virtual teams scholarly literature (ProQuest, Scopus, Web of Science, and Informit A + Education databases) using search strings 'higher/tertiary education, university or college' (to isolate the university sector) and 'virtual/online teams/groups/collaborations/teamwork' (to target the online context of the research), reveals a dearth of discussion of pedagogy that informs and enables academics to facilitate teaching strategies that address generic learning outcomes in virtual teams literature.

This article focuses on the Business disciplines, which attract a significant share of the Australian student body (Australian Business Deans Council, 2022). These highly subscribed business degrees 'teach and research the areas vital to the success of the businesses that underpin the [Australian] economy' (ABDC, 2022). The popularity and necessity of business to contemporary society and global economies justifies these disciplines as the context of study. The business-related disciplines of interest include Management, Economics, Accounting, Commerce, Human Resources, Finance, and Marketing.

Specifically, the context of pedagogical investigation is that of online undergraduate Business programs delivered by Australian universities. Online collaboration skills include technology/digital, communication, and collaboration skills which are categorised as employability skills and are sought by industry (Australian Department of Education Science Training, 2002; Australian Industry and Skills Committee, 2021, 2022). Jackson (2013) and Cotronei-Baird (2020) question the pedagogical efficacy of the higher education sector to teach and develop employability skills, which instead relies on industry placement programs to expose students to employability skills in workplace contexts (Australian Universities Accord Review Panel, 2023; Jackson, 2013; Wolf & Archer, 2013). This paper focuses on the pedagogical role higher education has in developing employability skills through pedagogical intervention so they can subsequentially be applied, reflected upon, and intentionally and further self-developed during industry placements. Therefore, the topic of employability skills development in industry contexts is outside the scope of this research as is the integration of collaborative artificial intelligence (AI). The authors acknowledge that artificial intelligence (AI) products are widely employed to improve collaboration and team productivity in online collaboration environments in industry (Tummala et al., 2025) and university teaching contexts (Zheng et al., 2024), and are worthy of separate investigation.

Literature review

In the virtual teams literature 2010–2020, diverse, siloed, individual approaches to online groupwork are evident. This is confirmed by Cotronei-Baird (2020) and Paterson and Prideaux (2020) whose small single-institution studies found arbitrary and inconsistent pedagogical approaches to online groupwork skills development.

Virtual teams' scholarly literature published 2021–2024 reveals a glimpse of investigation of broader pedagogical considerations focused on the development of online collaboration skills in higher Business education. The most relevant article offers McCool

and Mitchell's (2024) framework for virtual team education. This framework offers a description of pedagogical practice appropriate to experiential learning spirals which are represented as one element of this article's proposed framework. Another difference between McCool and Mitchell's (2024) framework and the framework presented in this paper, is the application of a single rather than several experiential learning cycles to the whole group project. In common, both frameworks use experiential learning pedagogy to facilitate the further development of online collaboration skills, knowledge and practice.

In this study, qualitative data collection processes evidence current pedagogical considerations, challenges, and practices. Qualitative data analysis will isolate and identify pedagogical strategies and concepts that directly intention the development of online collaboration employability skills and knowledge. These research processes contribute to the development of an empirically evidence-based pedagogical framework that guides the design and facilitation of online collaboration employability skills.

Methodology

According to Birks and Mills (2015), Grounded Theory results in the generation of new theoretical knowledge that explains a phenomenon and ultimately informs practice in a given discipline. Charmaz (1996) confirms that Grounded Theory offers a logically consistent set of data collection and inductive analytic procedures aimed to emerge and develop theory. It is Grounded Theory's focus on theory development that highlights the advantages of Grounded Theory methodology over other qualitative methods including Content and Thematic Analysis. Grounded Theory is particularly applicable to exploratory research where limited knowledge of the study area exists. For these reasons Grounded Theory was adopted as a research methodology for this study.

A fundamental premise of Grounded Theory is to let key issues emerge rather than forcing them into preconceived categories in the extant literature (Charmaz, 1996; Mills et al., 2006; Stern & Porr, 2011). The iterative analytical processes offered by Grounded Theory include the initial process of Open Initial Coding after each data collection event. This allows for adjustment and refinement of research focus to investigate new insights as they emerge and enables identification and coding of key concepts in the data (Charmaz, 1996). Focused Coding, the second of three Grounded Theory analytical processes, provides opportunity for the researcher to group related codes into broader categories and identify the relationship between categories. Theoretical Coding is employed in the later stages of grounded theory analysis aiming to shift the analysis in a theoretical direction. Theoretical Coding requires the focus to turn to the central theme that best explains the phenomenon under study (Mills et al., 2006). Throughout the iterative and recursive analytical processes, memoing of emerging constructs, themes, comparisons, patterns, trends and interpretations is a process necessary to theory development (Charmaz, 1996; Mills et al., 2006).

Recruitment and data collection

Strategic purposive recruitment strategies were employed, (JCU Human Ethics Approval H8924), to ensure access to Business discipline academics who teach undergraduate courses requiring online groupwork. Investigation of public-facing online program

handbooks and course profiles enabled discovery of eligible online course codes, title, learning outcomes, and assessment methods, and email access to the course coordinator. Cycles of 'recruit and interview' occurred in blocks over five months. This spread of interview events allowed time to identify initial concepts and constructs after each interview (Initial Coding) and integration of those codes into broader categories and understanding the relationship between the broader categories (Focused Coding). Focused Coding commenced upon the completion of Initial Coding of the third interview and continued reiteratively throughout and beyond the data collection period. Theoretical Coding occurred later in the data analysis process and was gradually finalised through enhancing the researcher's theoretical sensitivity through further data collection or generation, repetitive and reiterative consideration, comparison and memoing, eventually resulting in the emergent developed theory.

The participant group of ten Business academics represented seventy-three years of online teaching experience. All interviewees were employed at Australian public universities and were located across six of seven Australian states. One of the ten participants facilitated online groupwork in a learning context; nine participants facilitated online groupwork in an assessment context, that is, the groupwork was required to successfully complete an assessment task. Interview questions sought to discover teaching academics' strategies, considerations and concerns, through questions that enquired about their teaching practices in relation to teaching implicit online collaboration skills and knowledge. Interview questions centred around Institutional and course details, Task design, Teaching approach, Teaching philosophy, and Demographic details.

Analysis

In line with Grounded Theory practice, Initial Open Coding followed each interview. In-vivo (verbatim) coding was applied to ensure the data driven nature of the analysis.

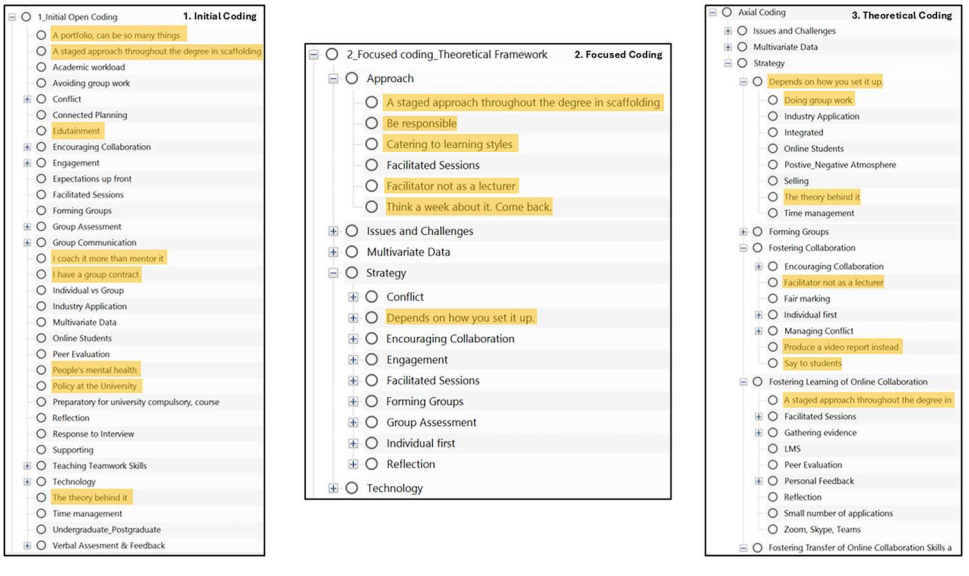

Figure 1. Coding outputs highlighting in-vivo codes.

Focused Coding commenced after the initial coding of the third interview but continued reiteratively throughout the interview data collection phase. **Theoretical Coding** commenced towards the completion of the **Focused** coding as the centrality of themes emerged. In this phase of analysis, the pedagogical intention of each strategy, served as the attribute of categorisation. Figure 1 presents coding outputs for each coding process and highlights the use of in-vivo (verbatim) codes throughout the analytical process.

Fifty-eight strategies were transferred from NVivo to Excel and coded to the pedagogical content knowledge construct that best represented the strategy's primary pedagogical intention. Five categories of underlying pedagogical intentions were derived from the data, (1) Tone and Awareness, (2) Learning and Metacognition, (3) Inter-Reliance, (4) Accountability, and (5) Comfort. The strategies, aligned to the pedagogical content knowledge constructs, and the constructs themselves, evidence the isolation and identification of pedagogy that underpins the intentional development of online collaboration skills and knowledge, in experiential online groupwork contexts.

Presentation of data

The following analytical outcomes present the five constructs. Each construct is supported by strategies that reflect pedagogical intention and intervention to develop implicit online collaboration skills and knowledge.

1. Tone and Awareness (Setting the tone through promoting student awareness of implicit learning / pathway)

The Tone and Awareness pedagogical content knowledge construct contains strategies demonstrating intention to set the tone of the online collaboration and the tone for learning implicit online collaboration skills, practice, and theory. These strategies were derived from data that was coded to the 'Say to the students' in-vivo code. Appendix 1 lists the strategies that support the Tone and Awareness pedagogical content knowledge construct (also listed in Figure 2 later in this paper).

2. Learning and Metacognition (Supportively promoting student awareness and responsibility for documenting and articulating their online collaboration skills learning)

Learning and Metacognition strategies, like Tone and Awareness strategies, require explication of implicit learning (content, processes, assessment criteria and method). Learning and Metacognition strategies focus on learning about self and explication of that learning in the initial group formation stage and throughout the group task. Learning and Metacognition strategies offer six choices of group formation strategies and four strategies that focus on the metacognition and articulation of implicit online collaboration skills and knowledge learning. Appendix 2 (and later Figure 3) present the Learning and Metacognition strategies.

3. Inter-Reliance (Fostering positive interdependence through the design and facilitation of the group-based task)

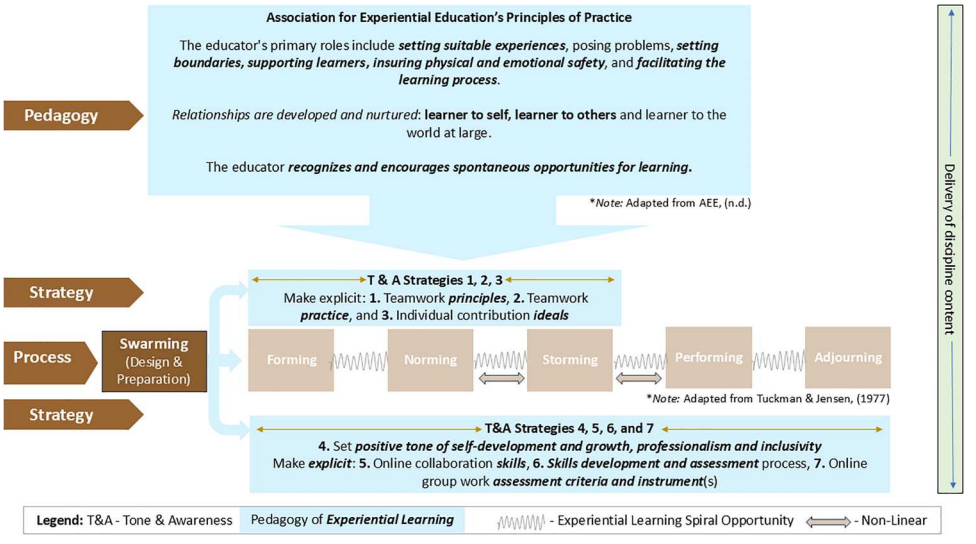

Figure 2. Alignment of tone and awareness strategies to experiential learning pedagogy within Tuckman and Jensen's (1977) group development model.

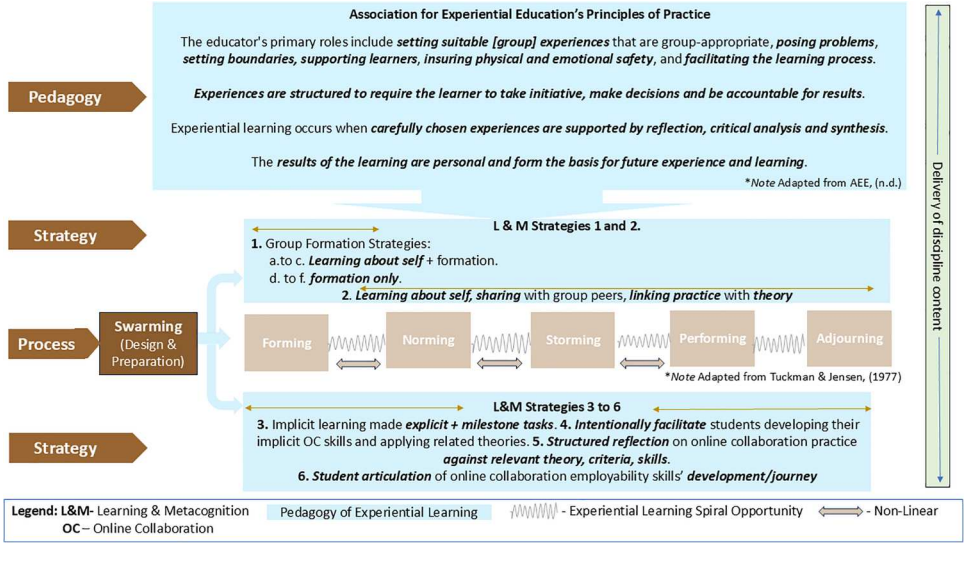

Figure 3. Learning and metacognition strategies alignment to experiential learning pedagogy within Tuckman and Jensen's (1977) group development model.

Inter-Reliance strategies create reliance on and between fellow group members so that each member's achievements contribute to group achievement. Appendix 3 (and later Figure 5) present the Inter-Reliance strategies derived from the interview data.

4. Accountability (Fostering both individual and group accountability to supportively avoid unequal contribution and unfair marking)

Elements/Explanation	Example Strategies
1. Positive Interdependence The perception that we are linked with others in a way so that we cannot succeed unless they do.	Mutual learning goals, joint rewards, divided resources, complementary roles, group identity, environmental, task, competition, fantasy/novelty.
2. Individual Accountability The performance of each individual student is assessed, and the results are given back to the group and the individual. Individual accountability aims to strengthen each student.	Appropriate strategies include but are not limited to, **a.** giving an individual test to each student, **b.** randomly selecting one student's product to represent the entire group, or **c.** having each student explain what they have learned to a group member
3. 'Face-to-Face' Promotive Interaction Individuals promote each other's success by helping, assisting, supporting, encouraging, and praising each other's efforts to achieve, in synchronous audio and video communication.	[Mandatory] group meetings structured with agenda/minutes templates. Individual structured reflections that inform group structured reflections. Milestone group tasks scheduled. All elements and example strategies provide catalyst/opportunity for promotive interaction.
4. Social Skills Effective contribution requires interpersonal and small group skills.	Group skills including leadership, decision-making, trust-building, communication, and conflict management skills must be taught as purposefully and precisely as academic skills.
5. Group Processing (Structured Reflection/Problem Solving) Group members discuss how well they are achieving their goals and maintaining effective working relationships.	Structured feedback activity: Describe what member actions are helpful/unhelpful. Decide what behaviours to continue/change. Group processing to identify, define, and solve group work problems together. Group peer feedback and evaluation opportunity.

Figure 4. Essential elements of collaborative/cooperative learning pedagogy. Note: Adapted from Johnson and Johnson (2009).

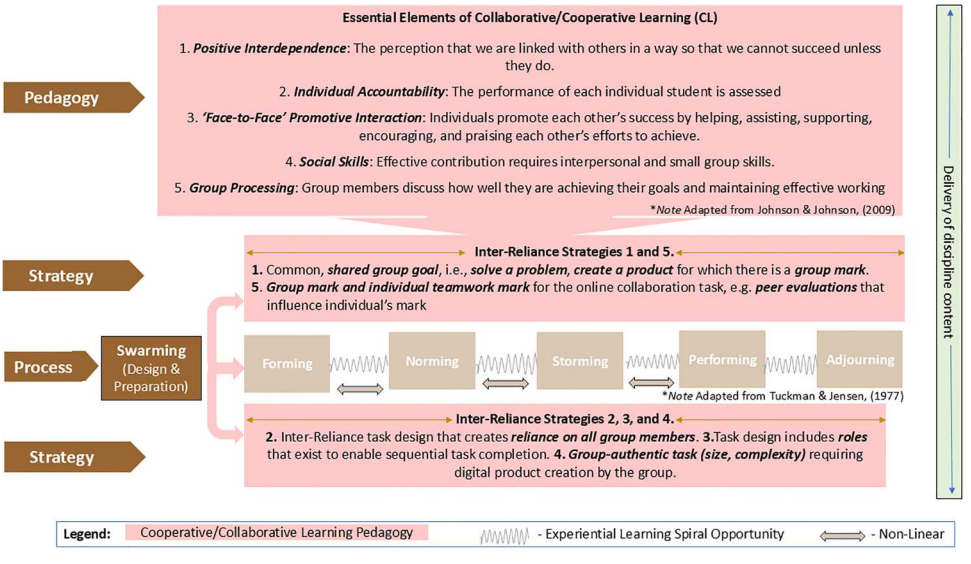

Figure 5. Alignment of inter-reliance strategies to collaborative/cooperative learning pedagogy within Tuckman and Jensen's (1977) group development model.

Accountability strategies ensure the fairness of the groupwork context. These strategies aim to achieve both group and individual accountability to promote fair contribution and marking practices. Group and individual accountability strategies evidenced in the interviews are presented in Appendix 4 (and later Figure 6).

5. Comfort (Promoting comfort, trust, and cohesion within online group members and groups)

Comfort strategies intend to foster trust, cohesion, and comfort within online collaborative groups. The first of the three Comfort strategies fosters comfort through

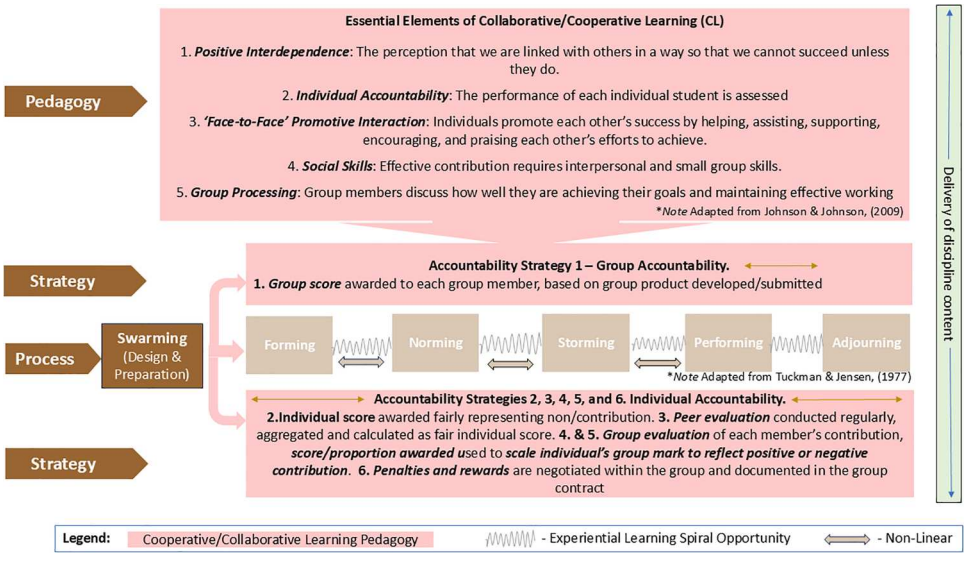

Figure 6. Alignment of accountability strategies to collaborative/cooperative learning pedagogy within Tuckman and Jensen's (1977) group development model.

encouraging student familiarity in fun, interesting, and sometimes novel contexts. These strategies directly promote comfort among team members. Strategies 2 and 3 foster teacher support, trust, and planned group processes, signalling teacher presence and care. Comfort strategies evidenced in the interview data are formally presented in Appendix 5 (and later Figure 7).

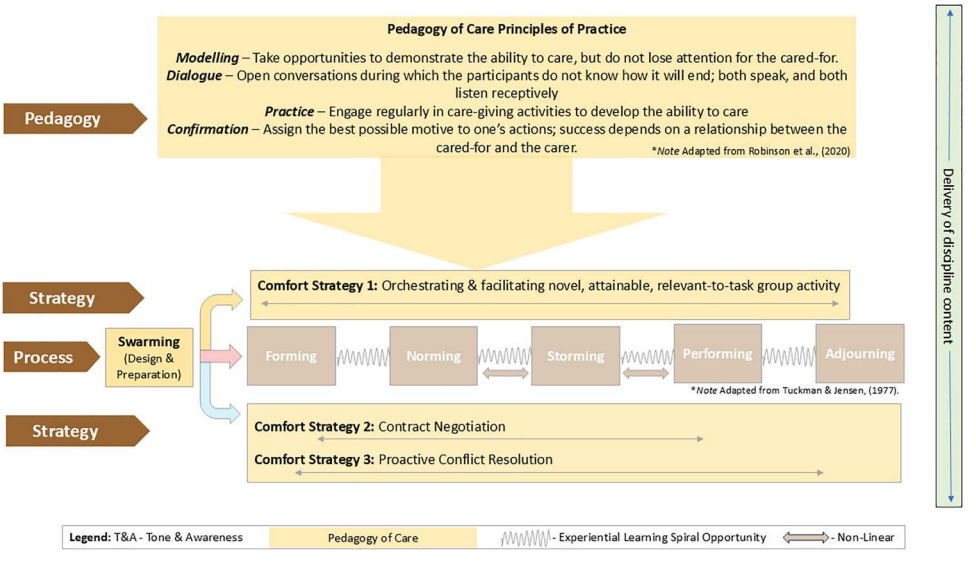

Figure 7. Alignment of comfort strategies to pedagogy of care within Tuckman and Jensen's (1977) group development model.

Discussion

The following discussion will address educational theories that support the constructs and propose a framework.

Tone and awareness, learning and metacognition and experiential learning pedagogy

Kolb's (1984) experiential learning theory formalises the process of learning by doing. It is presented as a cycle of stages (Concrete experience (doing), Reflective Observation (observing), Abstract Conceptualising (thinking), Active Experimenting (acting)) that must be experienced linearly but commencement can occur in any stage (Kolb, 1984). Kolb asserts this process represents a learning spiral where the learner repeatedly experiences all four stages.

Recognition that experiential learning is a continuous and iterative endless cycle supports the concept of experiential learning spirals. Less published but as significant, is the pedagogy that is needed to support experiential learning spirals particularly in teaching contexts where the experiential learning content is implicit. According to the Association of Experiential Learning cited in Boston University's Centre for Teaching and Learning Experiential Learning Guide, the facilitator's role during experiential learning includes *setting boundaries*, posing problems, *helping learners notice the connections between one context and another*, *between theory and the experience* and *encouraging this examination repeatedly* (Boston University Center for Teaching and Learning, n.d.). Alignment exists between experiential learning pedagogy and Tone and Awareness and Learning and Metacognition strategies.

Tone and awareness and experiential learning pedagogy

Tone and Awareness strategies promote students' awareness of the implicit learning, unlike the explicit discipline content, to be achieved throughout the online group-based task experience. Interview 3 described setting the tone, as ' … trying to make it relatable and drawing on those students' experiences of where they've worked in groups' to give ' … them some ideas, some concepts about what's good work, what works well, what doesn't, and then having them apply it to their own experiences'. Interview 4 sets the tone by way of honesty and support, ' … So, I also make it clear. There, there are these spikes, this, there's these difficulties. And this is the most difficult thing in an online setting to do. To find that team. And that is why I tell them to go on a discussion board … '. Setting the tone appears to be done verbally in synchronous sessions. It is often recorded and accompanied by online digital learning objects to offer access asynchronously. Interview 6 explains 'So, I am looking down the barrel of the camera, telling them this is what social loafing is'.

Seven strategies present within the Tone and Awareness pedagogical construct. Strategies 1–3 require the facilitator/lecturer to explicate and demystify groupwork principles, groupwork practice, and reveal individual contribution ideals. Strategies 5–7 require the facilitator/lecturer to explicate the implicit skills, knowledge, and related theory, and how they will be developed and assessed. Strategy 4 requires the facilitator/lecturer to set a

positive tone of self-development and growth, inclusivity, and professionalism. These strategies focus student learning on the implicit employability skills that are inherent in online collaboration contexts. Delivery of discipline content can be presented in parallel with delivery of implicit learning content including Tone and Awareness strategies (McCool & Mitchell, 2024). The results of faculty survey indicate that 'incorporating virtual team education into existing courses is a better approach than providing training in a standalone course' (McCool & Mitchell, 2024, p. 290).

The pedagogical intention to focus on implicit learning is evident in the Tone and Awareness strategies. These strategies enable the explication of online collaboration skills and knowledge, their importance, measurement criteria, and assessment processes, subsequently offering students a learning pathway to transferrable skills development. The strategies and their pedagogical intention link the Tone and Awareness concept to the pedagogy of experiential learning including *setting boundaries*, *helping learners notice the connections between theory and experience*.

Figure 2 illustrates alignment of Tone and Awareness strategies with Experiential Learning pedagogy within the group development process according to Tuckman and Jensen (1977). Listing the Association for Experiential Education's Principles of Practice at the top of Figure 2 represents the guiding role they play in informing Tone and Awareness teaching strategies. The placement of the Tone and Awareness strategies along Tuckman and Jensen's (1977) group development process, and the orange arrows in the Strategy shapes indicate when in the group development process the strategies are facilitated. As Tuckman and Jensen's (1977) group development process and the Experiential Learning cycle are non-linear and potentially iterative, so is the facilitation of Tone and Awareness strategies. Figure 2 indicates all Tone and Awareness strategies are facilitated at the start of the groupwork task prior to group formation with Tone and Awareness strategies 1–3 possibly not needed once groups have reached Tuckman and Jensen's (1977) Performance stage. Figure 2 also indicates facilitation of strategies 4–7 throughout the whole group development and groupwork task process. Horizontal spirals represent experiential learning spirals as potential implicit learning opportunities. The green vertical 'Delivery of discipline content', apparent in Figures 2–7 excluding Figure 4, indicate the need for integration of implicit skills teaching in parallel to discipline content teaching.

Learning and metacognition and experiential learning pedagogy

Learning and Metacognition strategies promote students' awareness of their self-development, which strategizes holistic education and adds depth of learning to the student experience. An additional pedagogical intention of Learning and Metacognition strategies is to increase the potential for metacognitively active students to consciously transfer online collaboration implicit knowledge, skills, and attitudes to workplace application and personal professional practice.

The themes of student self-development and whole-person education were prevalent in the interview data. Several interviewees stated the need to address the individual in the initial learning processes before moving to working in groups. Learning and Metacognition strategies are implemented throughout the learning experience to capitalise on all experiential learning cycle opportunities related to the implicit learning inherent in online collaboration learning/assessment events.

Where Tone and Awareness strategies prime learners to attend to learning implicit employability skills, Learning and Metacognition strategies facilitate that learning. The Learning and Metacognition construct includes six strategies for group formation and five strategies for learning about self as a group member in terms of teamwork practice and related theory. The first three group formation strategies intend to promote student awareness of self as a group member subsequently forming groups based on the knowledge gained about self. The last three group-formation strategies demonstrate decreasing objectivity in group formation, teaching presence, and student awareness.

The remaining five Learning and Metacognition strategies operationalise the pedagogical intention to learn about self as a group member. They strategize reflection on practice against theory, criteria or skills, and articulation of students' own development of online collaboration employability skills, knowledge, and attitude.

Figure 3 illustrates alignment of Learning and Metacognition strategies with Experiential Learning pedagogy, and application to the group development process according to Tuckman and Jensen (1977). Listing the Association for Experiential Education's Principles of Practice that are relevant to Learning and Metacognition strategies at the top of Figure 3 represents the guiding role they play in informing Learning and Metacognition teaching strategies. The placement of the Learning and Metacognition strategies along Tuckman and Jensen's (1977) group development process, and the orange arrows in the Strategy shapes indicate when in the group development process the strategies are facilitated. Like Figure 2, Figure 3 presents orange arrows in the Strategy boxes and fawn-coloured double-headed arrows within Tuckman and Jensen's (1977) group development process, to indicate the non-linear nature of these processes. This potential for iteration of some stages requires Learning and Metacognition strategies be facilitated iteratively throughout the processes. Horizontal spirals between group development stages represent experiential learning spirals as potential implicit learning opportunities.

The defining characteristic of the Tone and Awareness and Learning and Metacognition pedagogical constructs and related strategies, are the student focus on implicit learning and its structured integration into discipline-content teaching. McCool and Mitchell (2024) refer to this integrated approach as a 'step-in' approach (p. 289). The pedagogical intention of Learning and Metacognition strategies is to facilitate learning and development of online collaboration knowledge and skills. These strategies also align with the Association for Experiential Education's role of the facilitator in experiential learning contexts (Association for Experiential Education, n.d.).

Inter-reliance, accountability and cooperative/collaborative learning (CL)

In recognition of the similarities in pedagogical intention and strategy, the terms 'Cooperative Learning' (Johnson et al., 1998) and 'Collaborative Learning' (Bruffee, 1995), are used interchangeably (Jacobs & Seow, 2015; Smith, 1995). This paper uses the neutral abbreviation 'CL'.

CL focuses on the collaborative nature of learning in cooperative groups. According to Jacobs and Seow (2015), the affordances of CL include ' … making it more likely that student-student interaction will realize its potential' and through processing of group dynamics and self as group member, ' … the collaborative skills and attitudes that students develop in the process of interacting with their peers will serve students well

throughout their lives in whatever contexts they find themselves … ' (p. 30). Johnson and Johnson (1999) and Johnson et al. (1998) assert CL requires five elements to succeed: (1) Positive interdependence, (2). Individual accountability, (3) Promotive interaction, (4) Appropriate use of social skills, and (5) Periodic processing of how to improve the effectiveness of the group. The five elements have intention towards developing effective collaboration within cooperative groups. Interview data evidence two of these elements: Positive Interdependence (Inter-Reliance) and Individual Accountability (Accountability). Figure 4 offers explanation and example strategies for each of CL's essential elements.

Inter-reliance/positive interdependence and cooperative/collaborative learning

Positive interdependence, based on social interdependence theory (Johnson & Johnson, 2009), extends the concept of inter-reliance. Social interdependence exists when the outcomes of individuals are affected by their own and others' actions (Johnson & Johnson, 1999, 2009). Two types of social interdependence exist: Positive Interdependence and Negative Interdependence. Positive interdependence is necessary for cooperative groups to work collaboratively.

From an educational psychology perspective Johnson and Johnson (2009) explain, 'Knowing that one's performance affects the success of group mates creates *responsibility forces* that increase one's efforts to achieve' (p. 367). In support, Jacobs and Seow (2015) assert 'PI is the CL principle which most prominently encourages sharing among students' (p. 33).

Role interdependence is one of several types of positive interdependence (Bennett & Rolheiser, 2011; Jacobs & Seow, 2015). Therefore, one strategy that contributes to the achievement of inter-reliance is to assign roles to the group task. Interview 1 explains ' … The group would have to solve a problem, and they'd have to talk about it from a different point of view. I would give them a role where they would have to contribute to the problem by being a member of the senior executive team'. Inter-Reliance strategies need to be structured so that reliance is a positive experience. Interview 3 concurs, 'I guess also because of the size of the task and the number of steps involved … at the end of the day that working together, is going to be a lot quicker … it's going to be a much better experience'. Inter-Reliance strategies can be combined with Accountability strategies so that they address unequal contribution and unfair marking issues.

The five Inter-Reliance strategies evidenced in the interview data and presented in Figure 5 facilitate positive interdependence through goal, role, resource, and reward interdependence. Research has shown that the fifth 'Inter-Reliance' strategy (reward interdependence) implicates 'accountability' as complementary to positive interdependence. Johnson and Johnson (2009) confirm 'Positive goal and reward interdependence tends to be additive … the combination of goal and reward interdependence tends to increase achievement more that does goal interdependence alone or individualistic efforts … ' (p. 366).

Figure 5 illustrates alignment of Inter-Reliance strategies with CL pedagogy, and application of Inter-Reliance strategies to the group development process according to Tuckman and Jensen (1977). Four of the five essential elements of CL as listed in Figure 5 are evident in the five Inter-Reliance strategies listed. Horizontal spirals represent experiential learning spirals as potential implicit learning opportunities.

Strategy 1, a shared group goal promotes the perception that we are linked with others as stated in the first essential element of CL, Positive Interdependence. Essential element 2, Individual Accountability is reflected in Strategy 5, Group mark and individual mark. Figure 5 benefits from the same symbols that indicate non-linear processes, learning spiral opportunities, and implicit skills teaching integrated into the teaching of a discipline content course. The purpose of Figure 5 is to represent the underpinning CL in the Inter-Reliance construct's strategies and pedagogical intention.

Accountability and cooperative/collaborative learning (CL)

Interviewees discussed experiential online groupwork within an assessment context. The intention to assess group-developed products ensures group accountability in each context. In group-accountability assessment strategies, group members usually receive the same mark, therefore not addressing the issue of unequal contribution or applying the principle of fairness in assessment. To address these issues individual accountability is applied to group-assessment tasks. Methods of application are diverse.

Interview data assert the benefits of applying individual marks to a group task. Reference was made to 'individual marks' or 'differential marking' throughout the data. Individual or differentiated marks intended to reward (penalise) according to an individual's (non)-contribution. Interviewees stated individual marks enhanced the fairness of the groupwork event and assessment marking: '… but I feel it is fair to the students because they already come with a mindset of teamwork … teamwork is dreaded, and it's because we mark them, based on the product, and they can have free riders who still get the mark for the product' (Interview 4). Individual marks also provided motivation for fair contribution. Interview 8 explains '… if they all signed that one person hasn't contributed … I will send an email to that student and ask if they agree … so I can mark based on what they actually submitted'. If peer evaluation was implemented as a way of differentiating individuals' marks, further reliance on group members and group dynamics was created. Jacobs and Seow (2015) assert 'The principle of Individual Accountability puts pressure on members to do their fair share in the groups' (p. 32). This explains the relationship between positive interdependence and individual accountability.

Figure 6 and Appendix 4 present six Accountability strategies. The first refers to group accountability and links to positive goal interdependence. The remaining five strategies present five variations of individualising/differentiating individuals' marks. In interview discussions related to how marks were individualised or differentiated, uncertainty was evident. Interviewees were unsure they were assessing the groupwork outcomes, or that they were assessing groupwork skills by assessing the group-produced product. Incongruence between the assessment method and or instrument and the groupwork outcome or criteria was evident. Interview 3 expressed confusion and uncertainty when asked how the criteria 'Application of interpersonal skills using collaborative approaches' was assessed via the submission of an Excel spreadsheet.

The other concern within this topic of individual accountability was the realisation that assessment of groupwork skills and knowledge, occurred without benefit of teaching those skills and knowledges. Interview 9 stated '… that's absolutely true: I'm assessing

something I'm not teaching. I'm mentoring it, and I do talk about it. But I don't teach it'. Eighty per cent of interviewees concurred, basing their pedagogical practice on assumptions students are already equipped with these skills. Interview 1 elaborates ' … that's an assumption we make … we assume that students by the time they get to third year, know how to work in a group. But I think that staff assume in first year, second year and third year, that someone else is teaching those group skills. … but you generally assume that being adults, they will be able to work in the group, and I don't think anybody ever teaches them how to do that'.

Figure 6 illustrates alignment of Accountability strategies with CL pedagogy, and application of Accountability strategies to the group development process according to Tuckman and Jensen (1977). All six Accountability strategies directly align to essential element 2, Individual Accountability. It is evident that Strategy 6, Negotiated Penalties and Rewards, has direct relevance to essential element 3, Face-to-Face Promotive Interaction and 5, Group Processing. Figure 6 aims to prompt consideration about the relationships between Accountability strategies and CL pedagogy.

Comfort, and pedagogy of care

Comfort strategies that intend to foster trust, cohesion, and comfort within groups in online learning environments logically align with pedagogies of care. Care was noted as a core value to teaching (Noddings 2012) and became a priority for students consequential to the pandemic (Robinson et al., 2020) and the subsequent feelings of dehumanisation, distance, isolation experienced in remote online learning (Henriksen et al., 2022). Investigation into application of pedagogies of care to online learning environments reveals a growing area of research. However, there remains a dearth of pedagogical theory around pedagogies of care directed at online settings (Henriksen et al., 2022).

Comfort

The intention to create comfort within online groups is based on the belief that ' … students can't begin to work together, if they don't feel comfortable with the environment in which they're in' (Interview 1). Creating comfort within online collaborative groups is also perceived as a positive influence on the group's assessment practices. Interview 5 also infers the positive influence comfort within groups has on group assessment outcomes ' … the goal is for them to learn about themselves, and then share that with their team, so that they learn how to work better as a team member, which then hopefully flows into their assessment'. Where Interview 1 used weekly attainable and enjoyable tasks to be completed by each group to grow the confidence and comfort in groups, Interview 5 employed self-learning and sharing that self-learning with group members, to build confidence and comfort in groups. Interview 8 employed negotiation of a templated contract to establish group rules, expectations, and consequences, to build group confidence and comfort.

Figure 7 illustrates alignment of Comfort strategies with Pedagogies of Care, and application of Comfort strategies to the group development process according to Tuckman and Jensen (1977). Horizontal spirals represent experiential learning spirals as potential implicit learning opportunities.

Pedagogy of care as underpinning, overarching, and seminal

In developing a model of pedagogical care in online learning environments, Henriksen et al. (2022) offer an interpretation of pedagogical care.

> We conceptualize "care" as a factor that allows viewing students as individuals with a range of needs that include not just learning, but broader facets such as emotions and wellbeing. Such a perspective recognises the humanity of students and aims to offer care in ways that further their learning and total experience as a person worthy of care. The basis of a pedagogy of care is found in deep connectivity between individuals and a learning community. (p. 78)

Although 'Comfort' strategies are most obviously situated within pedagogies of care, the pedagogical intention to develop implicit online groupwork employability skills is based on and requires, caring. Interviewees who shared 'Comfort' strategies were incited to explicate their commitment to caring about students' personal development (Interview 1), their belief in the importance of generic transferrable employability skills (Interview 8), and or their obligation as higher education teaching academics to engage students in metacognitively learning, developing, and articulating online groupwork theory, practice, skills, and reflections (Interviews 4 and 5).

Within the complex, contentious, and mostly dreaded (Interview 4) context of online groupwork, the challenges to students' mental and emotional well-being are numerous. Threats of unequal contribution, unfair marking, limited staff support, insufficient task structure and resources, time-zone differences, misaligning timetables, group dynamics, technology challenges, personalities, leadership and communication style and skill variations, disempowerment, are areas of student concerns relevant to online cooperative groups working collaboratively in often high-stakes assessment contexts.

The pedagogical intentions of the five emerging pedagogical concepts evidence care based on pedagogical consideration of students' needs and complexities in learning implicit online collaboration skills in experiential learning contexts. The emerging pedagogical framework represents one possible embodiment of a pedagogy of care bespoke to the online groupwork assessment context. Figure 7 presents an overview of the theorised pedagogical framework represented in three sections: (1) Pedagogy, (2) Process, (3) Strategy.

The Pedagogy section illustrates the overarching influence of Pedagogies of Care, whose application to online and collaborative assessment/learning events, requires a rethinking of teaching practice to foreground design (and care) for the needs of students in online collaboration assessment contexts (Henriksen et al., 2022, p. 78).

Figure 8 illustrates the application of pedagogies of experiential and cooperative/collaborative learning after a teaching philosophy and praxis based on care. The supporting pedagogies are colour-coded and appear horizontally and vertically throughout the flow and process of the emerging pedagogical constructs.

The Process section employs Tuckman and Jensen's (1977) model of group development. Most are familiar with the rhyming stages of Tuckman and Jensen's (1977) theory of small group development: Forming, Norming, Storming, Performing, and Adjourning. All pedagogical model figures in this paper use double-headed arrows and spiral joiners of Tuckman and Jensen's stages to indicate the potential for reiteration and repetition throughout the group development process. Tuckman and Jensen's (1977) model

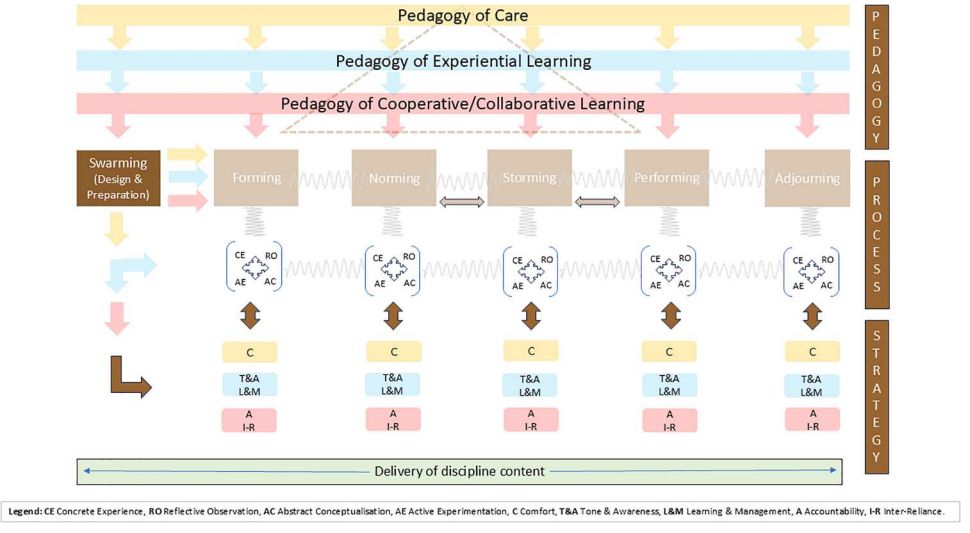

Figure 8. Pedagogical framework for employability skills development in online undergraduate Business group work contexts.

of group development anchors the group development/facilitation process, provides a loose sequence of process around which to plan, and allows visualisation of potential structured and intentional experiential learning spirals at each stage.

The research focus on pedagogical practice has encouraged the representation of the 'Design and Preparation' stage required of the facilitator/teacher. This stage is labelled 'Swarming', maintaining Tuckman and Jensen's rhyme and illustrating the need for considered and active design and preparation. The 'murky brown' colour results from combining the three primary colours of yellow (pedagogies of care), blue (pedagogies of experiential learning), and red (pedagogies of cooperative/collaborative learning). Experiential learning is represented as applicable to each of Tuckman's stages. Kolb's experiential learning spiral is represented between stages (horizontal spirals), within each stage (vertical spirals), and within the experiential learning events targeting transferrable skills (horizontal spirals between the bracketed experiential learning cycles). The Strategy section informs and guides choice and application of pedagogical strategy. Refer to Figures 2–7 and Appendices 1–5 for strategy examples.

The content for the facilitation of implicit learning, consisting of online collaboration theory and skills, can be based on those employability skills faculty prioritise as important

Table 1. Example of implicit learning content.

McCool & Mitchell, 2024 (p. 280)	Related theory	Tuckman and Jensen's stage
Team member diversity	Belbin's Team Roles	Forming
Collaboration technology	Theories of technology adoption	Norming
Team structure and processes	Tuckman & Jensen's theory of group development	Forming
Team communication	Belbin's Team communication theory	Norming
Team relationship building and trust	Personality profiling, Jack Gibb's Theory of Group Development/Gibb's Theory of Trust	Storming
Team leadership	Leadership theories, shared leadership	Norming/Performing

to their discipline. Alternative or example implicit learning content, discerned from the literature and presented as 'Foundational Virtual Team Concepts', are offered by McCool and Mitchell (2024), and included in Table 1. To ensure reassurance of learning, reflection on practice against relevant theory needs to form part of the assessment strategy.

Summary

This research has isolated and identified the pedagogy that intends to address the development of implicit online collaboration skills in online groupwork contexts. The outcomes offer five pedagogical constructs that characterise and support teaching intervention in relation to developing undergraduate Business students' implicit online collaboration skills. Twenty-seven pedagogical strategies which support the constructs are also shared as part of the developed framework. The framework provides a shared and common language to enable professional dialogue related to the scholarship of implicit skills teaching in higher education by addressing questions of how it is done and to what level it is mastered. The strategies can provide stimulation for consideration of other strategies that would fit into one of the five constructs by demonstrating pedagogical intention to develop students' implicit online collaboration skills and their ability to articulate those skills.

The framework also illustrates the complex and relational nature of developing (inter)personal capacity within individuals and teams in online settings. The theoretical underpinnings of the framework reflect the complex and relational nature of the pedagogical practice required to humanely teach online collaboration skills in courses that supply a groupwork context. The complex and relational foundations of this pedagogical model reflect the complex and relational nature of humanity, challenging or defying artificial intelligence's ability to replicate: A pedagogy of humanity?

Future research

The intention to develop an empirically evidenced-based pedagogical framework has been achieved in this research study. Subsequent research should seek to validate the emerging constructs and their strategies, for example employing survey methods to measure online undergraduate Business students' perceptions of the importance of the pedagogies (constructs and strategies) applied to the implicit learning inherent in online collaborations. It may then be possible to develop a tool or criteria by which to measure the level of pedagogical intention towards developing students' online collaboration skills implicit in online groupwork contexts.

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