

Hiding in plain sight: the 'relationship' in peer assisted learning in higher education

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Abstract

Relationships underpin peer learning; however, they remain under-researched and under-theorised. We propose a model to identify factors that contribute to relationships in Peer Assisted Learning (PAL). Our model integrates three discrete bodies of knowledge: previous studies of PAL affordances, a synthesis of understandings drawn from learning theories, and studies of peer relationships in business and education. Our model features two components: social and cognitive congruence that deliver sustained PAL improvements. To evaluate the contributions of social and cognitive congruence to successful PAL outcomes, we evaluated four theoretical scenarios based on presence and/or absence of these factors. In each case, variations in social and cognitive congruence and mediating factors can potentially vary the quality of learning outcomes, student interactions, and engagement in PAL. Our scenarios can be employed to evaluate areas of targeted improvement in PAL. We discuss the implications of our model for PAL research and practice.

Keywords: Peer Assisted Learning; peer learning relationships; social congruence; cognitive congruence.

Introduction

The 'relationship' in Peer Assisted Learning (PAL) has the potential to leverage and enrich learning outcomes in higher education. Proposing a theoretically-based conceptual framework for PAL relationships in higher education may guide the development, design, and implementation of programmes. To conceptualise PAL relationships, we integrate theoretical considerations from diverse fields, including business and education. Our work responds to Jacobi (1991), Budge (2006), and Crisp's (2009) calls for a unified conceptual framework and definition of PAL. Our model addresses these opportunities by identifying the central unifying theme in PAL – the relationship. Here we employ the terminology 'mentor' and 'mentee' to refer to the student who provides assistance and the student who receives support, respectively.

To this end, we build on Topping's (1996, p.322) ubiquitous definition of PAL: peers come from 'similar social groupings' and engage in mutually beneficial learning partnerships that build on 'helping each other to learn and learning themselves by teaching'. In ideal circumstances, mentors will concurrently learn about themselves as learners (Boud et al., 2000) and about how to facilitate others to achieve excellent educational outcomes (Backer et al., 2012), and participation in PAL will deliver positive academic and psychological gains for both mentor and mentee (Topping and Ehly, 2001). Socio-cognitive learning theory provides the context for PAL development (Falchikov, 2001; Ten Cate and Durning, 2007). In particular, Vygotsky's zone of proximal development explains how peers can scaffold less academically developed peers (cited O'Donnell and King, 1999). The mentor, having successfully transitioned through the same learning experiences, can anticipate learning difficulties and understand mentees' likely cognitive challenges (Lockspeiser et al., 2008). This ability is defined as cognitive congruence and allows mentors to employ language that is cognitively appropriate to mentees' level of development (Ten Cate and Durning, 2007). In addition to the cognitive partnership established between peers, social congruence ensures the development of successful PAL partnerships (Moust and Schmidt, 1994). Social congruence represents the basis of a relationship where mentees feel comfortable to disclose learning gaps that the mentor helps to resolve (Ten Cate and Durning, 2007, Lockspeiser et al., 2008).

Previous evaluations of PAL sought to identify contributing factors to learning outcomes (Falchikov, 2001). That work demonstrates that PAL produced improvements in academic

success, metacognitive strategies, and self-efficacy (Hilsdon, 2014; Hammond et al., 2010; Fox et al., 2010; Collings et al., 2014; Arco-Tirado et al., 2011; Henning et al., 2006); however, elucidating the sustained benefit of these responses remains elusive. For example, some studies (Capstick, 2004; Ashwin, 2003) have identified an increase in strategic learning approaches (e.g. to complete an assignment), without the acquisition of transferable skills. Furthermore, while the literature shows benefits for students, the effect size of many studies is usually modest (Topping, 2005). We acknowledge the sustained influence on PAL of the learning environment, assessment, curriculum design, and pedagogical initiatives. The other factor – hidden in plain sight – is the interaction between mentor and mentee which can profoundly influence PAL.

Nora and Crisp (2007) recognise the mentor-mentee relationship as the black box of PAL. We join a growing community (e.g. Budge, 2006; Nora and Crisp, 2007; Holt and Berwise, 2012) to suggest that PAL relationships remain under-researched. We propose that the mentor-mentee relationship determines the success of the programme and quality of learning outcomes associated with peer learning. We argue, as do others (e.g. Holt and Berwise, 2012) that the peer relationship remains underexplored. Instead, most researchers focus on identifying the product of the relationship – the learning outcomes (Nora and Crisp, 2007). An extensive consideration of the functioning of the relationship will provide the foundation for improving our understanding of how PAL produces positive outcomes, how both parties in the relationship negotiate learning and, importantly, how we can engineer PAL successes.

This paper will first identify elements of the PAL relationship that facilitate positive learning and psychological outcomes from past research. Secondly, it will discuss personal and environmental factors that may negatively impact peer relationships. Thirdly, a conceptual framework of peer relationships will be presented and it will be discussed in relation to four relationship scenarios. Finally, we conclude with our consideration of the implications of peer relationships for the design, implementation and research of PAL.

Previous research on peer assisted learning relationships

For this review of PAL relationships, we selected papers on peer learning based on their relevance to relationships. Our review encompassed the disciplines of Business and

Education (Jacobi, 1991). The focus of these studies revolves around the practices in which mentors engage in to elicit mentees' development (Ward et al., 2014; Terrion and Leonard, 2007). In business contexts, research has focused on mentoring relationships in the workplace and their evolution through four stages (Kram and Isabella, 1985). Research on PAL relationships in education has focused on mentor practices that participants perceived to produce positive learning outcomes. These studies show that mentors accomplish three key functions: academic support and goal setting, emotional and psychological support, and role modelling (Nora and Crisp, 2007). From these disciplines, we identified several emergent relationship themes.

1. Relationships develop through defined stages

Kram and Isabella's (1985) seminal work on mentoring relationships in the workplace recognises that relationships mature through definable stages. Each stage comprises specific functions accomplished by mentors to facilitate mentees' development and, eventually, their independence. The presence of specific functions fulfilled by mentors, related to the provision of career development and psychosocial support, provide symptomatic representations of different relationship stages.

PAL relationships comprise four distinct phases: initiation, cultivation, separation, and redefinition (Humberd and Rouse, 2015; Hadidi et al., 2013; Mullen 1994). These phases correspond to levels of variation in certainty about the relationship, mentor-mentee interactions, and expectations about the relationship and roles. Uncertainty characterises the **initiation phase**. Roles and expectations become increasingly certain through this phase (Humberd and Rouse, 2015; Hadidi et al., 2013; Mullen 1994). The **cultivation phase** represents growth in trust, mutual respect, and shared aspirations that create the impetus for focused action. With the attainment of mutually agreed goals, an up-skilled mentee will become increasingly independent. During the **redefinition phase**, effective mentoring produces new aspirations and growth in the dyad (Hartmann et al., 2014).

2. Mentors provide academic and psychological/emotional support

PAL educational researchers focused on the social skills and interpersonal traits that produce tangible outcomes (Ehrich et al., 2004). Crisp and Cruz (2009) summarise the implicit consensus of mentoring relationships: they are personal and reciprocal (i.e. exerts

benefits for both parties), and include the provision of educational development, emotional support, and role modelling. Nora and Crisp (2009), Christie (2014), and Ward et al. (2014) also recognise distinct functions for mentees: educational/career goal setting and appraisal, emotional and psychological support, academic subject knowledge support, and the presence of a role model. Mentors achieve these functions by establishing frameworks to develop a caring and personal relationship (Eller et al., 2014). To become a successful mentor, several traits remain central: academic knowledge and skills; motivation to become a mentor; communication skills; supportiveness; empathy, enthusiasm and flexibility; empowerment of the mentee; trustworthiness; and willingness to be continuous learners (Terrion and Leonard, 2007). A mentor's ability to respond and adapt to mentees' task-based and emotional requests for help define aspects of successful PAL relationships (Ward et al., 2014). This serves as an overarching construct that overcomes the dichotomy between instrumental (pragmatic, task-oriented) and psychosocial functions (social and emotional support).

3. Social and cognitive congruence as factors that determine the success of PAL programmes

Establishing caring, respectful, and personal relationships produces implicit cognitive and social psychological elements (Crisp and Cruz, 2009). Ward et al. (2014) explicitly recognise the central role of a mentor in attending to mentees' cognitive and psychological/emotional requests. Longfellow et al. (2008) differentiate the value that mentees place on the relationship, which represents a qualitatively different interaction compared to other helping relationships in education (Capstick, 2004). For mentors to provide cognitive/academic and psychological/emotional support, appropriate levels of cognitive and social congruence – respectively – are needed. Mentees value mentors that are able to scaffold learning, identify learning gaps, and provide explanations that are suitable to their cognitive development (Longfellow et al., 2008), and they value the mentor's social and psychological support (Mackey et al., 2010). Even though both types of congruence are equally important (Chng et al., 2011), mentors' skills and attributes related to psychosocial support may be more important for mentees – especially for young and inexperienced students (Terrion and Leonard, 2007).

Social and cognitive congruence as elements of effective PAL relationships

To more fully account for the complexity of PAL, we have recognised the need to extend beyond cognitive transactions between peers, and we acknowledge that peer transactions at both the cognitive and social levels are important. For this purpose, we identify two domains – socio-psychological congruence and cognitive congruence (illustrated in Figure 1).

Social congruence, defined as perceived social similarity between mentor and mentee, allows for the development of trust, empathy, and an open, non-judgemental learning experience (Dioso-Henson, 2012). Cognitive congruence represents more than the provision of educational/academic support. It extends to modelling the sophisticated ways that more experienced thinkers conceptualise and solve problems (Bulte et al., 2007). We hypothesise that successful mentoring programmes rely on the balanced presence of social and cognitive congruence because each congruence contributes to the development of psychosocial and cognitive/academic outcomes. We also propose that social congruence may represent a prerequisite for the development of the relationship in its early stages, while cognitive congruence commences after its establishment. Finally, we predict that social and cognitive congruence vary over time, as external and internal factors influence the congruence of the PAL partnership. We discuss these factors next.

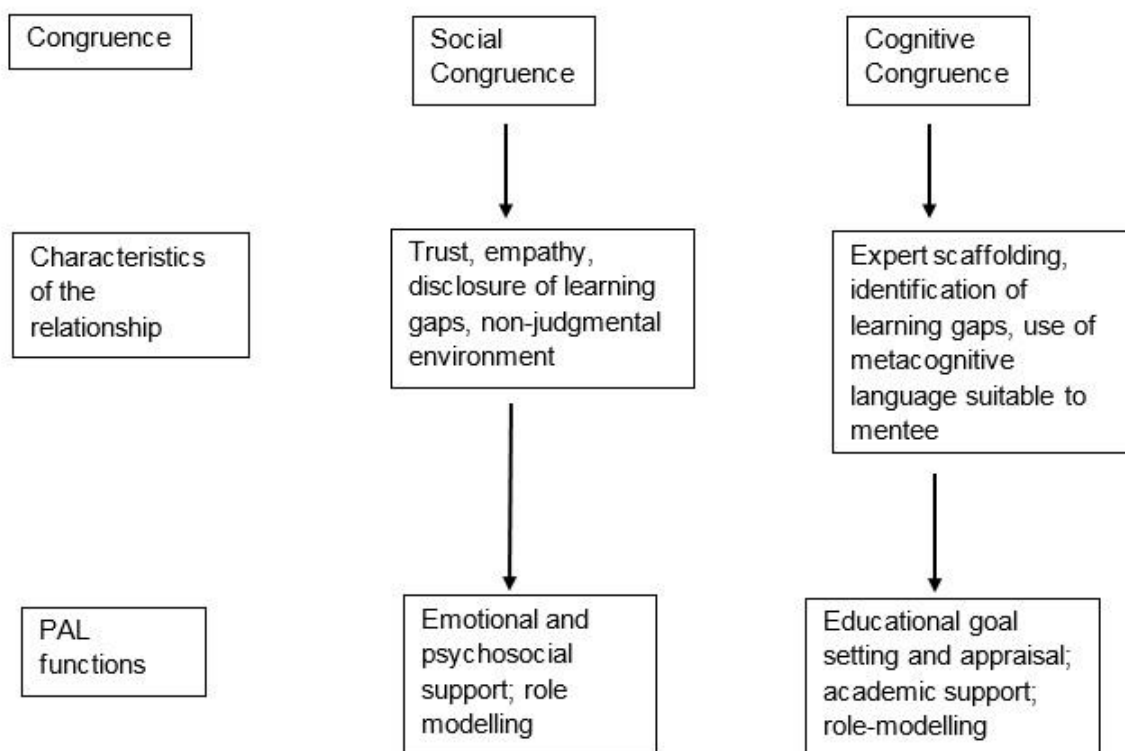


Figure 1. Impact of social and cognitive congruence on mentoring functions, and learning and psychosocial outcomes of PAL.

Factors that affect the nature and dynamics of PAL relationships

We have synthesised previous research on detrimental influences of PAL in Table 1, considering those external and internal (student-related) factors that influence the nature of the relationship, quality of learning outcomes, and success of the programme. A number of research studies have investigated mentor and mentee role expectations and motivation, and how these roles change over time in response to environmental pressures, mentees' requests for directive assistance (Brown et al., 2014), and unclear role boundaries (Holt and Berwise, 2012). A second group of research studies considered the influence of the metacognitive skills and language used by mentors. Roscoe and Chi (2007) demonstrated that mentors tend to engage mentees by explaining declarative knowledge, rather than employing questioning techniques to elicit deeper learning outcomes. Finally, the impact of the learning environment in which PAL programmes are contextualised cannot be overlooked (Ashwin, 2003). These factors are likely to include

the university assessment environment (Ashwin, 2003), design of the PAL programme (Ross and Cameron, 2007), and mentor training (Topping and Ehly, 2001).

Accordingly, we can cluster potentially hindering factors into three groupings: 1) Role expectations and motivation; 2) Metacognitive skills and strategies employed by mentors; and 3) Environmental factors (learning environment, design of PAL programme and mentor training). The first two clusters correspond to intrapersonal or student-related factors, and the third group acknowledges the impact of external factors. Integral to these groupings are three points:

- i) The complexity of mentoring relationships.
- ii) The impact on the degree of social and cognitive congruence present in the relationship.
- iii) The capacity to hinder or enhance the quality and effectiveness of the relationship before and during development.

Table 1. Summary of PAL limitations and conceptualisation of potentially hindering factors.

PAL limitations	Underlying issue	Conceptualisation as hindering factor	Source
Limited size effects of PAL	Limited transferability of skills, possibly due to poor cognitive scaffolding.	Intrapersonal variables- meta-cognitive skills	Topping (1996) Topping and Ehly (2001) Capstick (2004)
Students' perceptions of PAL as ineffective, low participation	Lack of programme structure, mentors' limited knowledge, role misconceptions.	Environmental variables- programme structure Intrapersonal variables- role expectations and motivation	Ismail and Alexander (2005) Capstick (2004) Topping (2005) Brown et al. (2014)
Changes in mentors' and mentees' role towards directional and passive role, respectively	Conflicting expectations and misconceptions about their roles.	Intrapersonal variables- role expectations and motivation	Capstick (2004) Ashwin (2003) Mackey et al. (2010)
Inconsistencies in mentors' guidance	Lack of mentors' metacognitive skills, poor training/preparation, role misconceptions.	Intrapersonal- metacognitive skills Intrapersonal- role expectations and motivation	Brown et al. (2014) Holt and Berwise (2012)
Quality of learning outcomes: correlation PAL and strategic learning	Focus on assessment requirements, impact of assessment-oriented environment, inappropriate mentors' metacognitive skills/facilitation skills, or role misconceptions.	Environmental- assessment-oriented Environmental- assessment type and design Intrapersonal- metacognitive skills Intrapersonal- role expectations and motivations	Ashwin (2003) Ten Cate and Durning (2007) Capstick (2004)
Mentors' knowledge-telling bias	Mentors engage in reproducing knowledge rather than questioning/content elaboration.	Intrapersonal- metacognitive skills	Roscoe and Chi (2007) Roscoe (2014) O'Donnell and King (1999)

Impact of external and internal factors on PAL relationships: social congruence and cognitive congruence

To examine the influence of cognitive and social congruence in PAL relationships we propose four theoretical scenarios, based on the presence and absence of both types of congruence. We use these scenarios to illustrate how the interaction of role expectations and motivation, metacognitive skills and environmental aspects influence the dynamics and nature of PAL relationships and, consequently, the presence or absence of social and cognitive congruence. Furthermore, we propose outcomes based on social and cognitive congruence when these are: present/present, present/absent absent/present and absent/absent.

Scenario 1: social congruence and cognitive congruence are present

The presence of social and cognitive congruence creates an environment where participants interact with trust (Bouquillon et al., 2005), inclusiveness, emotional security, and shared learning aspirations (Eller et al., 2014). Mentees feel secure in non-judgemental support so they can close learning gaps (Chng et al., 2011). Social congruence provides the foundation for other holistic aspects of the relationship: counselling, improved self-efficacy, and transition to academic life. Psychological benefits – for example, decreased stress and anxiety – also accrue from social congruence between mentor and mentee (Ginsburg-Block et al., 2006).

Adding cognitive congruence to this environment will do more than allow the mentors to serve as role models for sophisticated learning and problem solving. The proximity of mentors' and mentees' developmental stages provides a unique perspective for mentors to identify learning gaps. Since mentors scaffold the development and application of mentees' academic skills within the context of addressing specific learning outcomes, there exists a greater likelihood that those skills will become transferrable to other contexts. Mentors who move beyond strategic learning approaches and seek deeper learning outcomes will enable mentees to improve subject content knowledge and the ability to apply that understanding to new circumstances. However, the mentors' metacognitive awareness is key to the enactment of positive outcomes ascribed to cognitive congruence. If mentors lack understanding of metacognitive language associated

to learning processes, their ability to elaborate explanations that elicit mentees' metacognitive development may be limited (Roscoe, 2014).

Figure 2 presents our conceptualisation of an effective mentoring relationship, in the presence of social and cognitive congruence. Clearly established role expectations and motivations guide mentor and mentee interactions to create a mutually beneficial, non-hierarchical relationship (Colvin and Ashman, 2010), based on facilitation and development of mentees' skills. This level of connection and mutual contribution requires trained mentors.

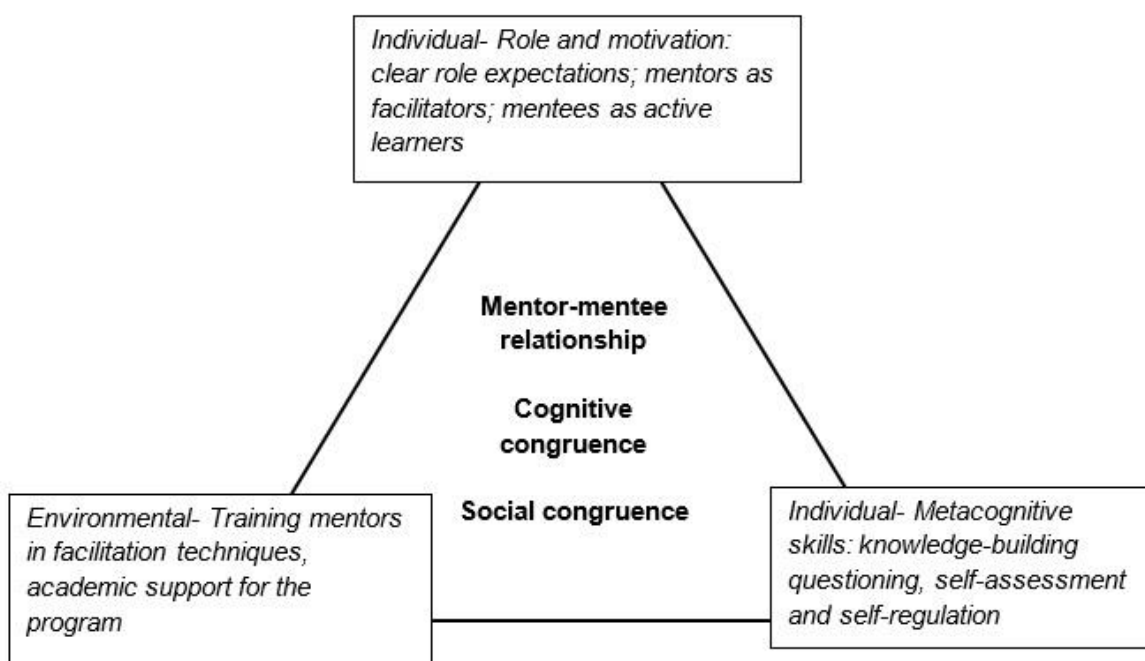


Figure 2. Conceptual framework for effective mentoring relationships.

In this scenario, mentors and mentees benefit from the programme, including academic and socio-psychological gains. The scene is set for mentees to improve their self-efficacy and reduce their levels of stress and anxiety. Mentors also have the opportunity to build their knowledge as they reflect on their growing expertise, and they construct understandings through inferring and integrating ideas across topics and domains (Longfellow et al., 2008). Perhaps unsurprisingly, much of the literature highlights the gains for mentors in successful relationships (Backer et al., 2012; Topping, 1996; Colvin

and Ashman, 2010). In such cases, mentors have reported improved self-efficacy, leadership and communications skills, combined with a sense of accomplishment (Malm et al., 2012).

This scenario has focused on the outcomes and dynamics of effective relationships. In the remainder of the scenarios, we predict significant shifts that flow from interactions between congruence and dissonance in the social and cognitive realms.

Scenario 2: social congruence present in the absence of cognitive congruence

In establishing social congruence, mentors build a trusting and supportive relationship with mentees (Allen and Eby, 2003). However, interactions involving the presence of social congruence and the absence of cognitive congruence will diminish previously identified benefits. Without cognitive congruence, we predict that a mentor will fail to scaffold the mentee, in turn producing diminished learning. In this scenario, motivations and role expectations will play a critical role in the development of the relationship. If mentees exhibit strategic help-seeking styles (e.g. completion of assessment tasks) driven from external motivations, they may seek assistance to complete a particular task (Brown et al., 2014).

In the absence of cognitive congruence, mentors could adopt highly directive and didactic roles. Information sharing, instead of knowledge building, might characterise the relationship. Mentors may invest more time explaining concepts instead of building on mentees' previous knowledge (Roscoe and Chi, 2007). Mentors may disengage if their expectations clash with mentees', or eventually readjust their expectations to fulfil mentees' requests (Brown et al., 2014). Evaluations of PAL programmes exhibiting the presence of social and absence of cognitive congruence may reveal positive evaluations from mentees – if mentors fulfil requests for strategic support. Mentees may also place higher value on the social aspects of the programme (i.e. they will value the programme as a social experience rather than an academic intervention).

If mentees manifest developmental help-seeking styles, and exhibit strong internal motivation, they are more likely to seek developmental advice from mentors (Alexitch, 2002). When the mentors' focus, and perhaps skill set, relies on didactic approaches, and

use of declarative knowledge, developmental advice may occur rarely. Such disparate expectations and dispositions may produce among mentees disengagement and abandonment of the programme. Mentees may likely apprehend that they will have achieved little, that the programme was ineffective, and failed to meet their needs (Capstick, 2004).

The type of assessment task, as well as the learning environment, will influence mentees' requests of strategic learning rather than developmental advice. In an assessment-oriented environment, mentors are more likely to respond to mentees' requests of help to complete and pass assessment tasks (Ashwin, 2003). However, we predict mentees will develop fewer transferable skills. Moreover, mentors may provide advice beyond their expertise and role boundaries – motivated by the social drive to help the mentee.

Scenario 3: cognitive congruence present in the absence of social congruence

In the absence of social congruence, cognitive congruence may produce reduced engagement. The absence of a non-judgemental learning environment remains likely to detrimentally influence PAL interactions. This scenario reflects how the presence of cognitive congruence per se represents no guarantee that students will develop metacognitive skills. Both parties may focus on delivering the outcomes that address specific assessment tasks, but skills development will barely feature in the learning relationship (Capstick, 2004). Mentors and mentees may initially engage in meaning-oriented learning activities to develop mentees' self-regulated learning skills, however, the absence of social congruence will diminish trust in the relationship. Mentees will be less likely to disclose learning gaps and ask questions, leading to a relationship with closer alignment to a master apprentice model. The possibility of positive metacognitive outcomes diminishes because mentees may be disinclined to question mentors' explanations or seek further clarifications. Cognitive congruence – in the absence of social congruence – may train mentees to focus predominantly on the completion of the assessment tasks. Also, mentees remain unlikely to experience positive psychological outcomes, including decreased anxiety and stress. These outcomes derive from the social aspects of the relationship (Ginsburg-Block et al., 2006) – namely, trust, empathy, and the existence of an open learning environment (Ward et al., 2014).

Role expectations and motivations will also affect the outcomes of this scenario. Mentees who expect direction may pressure mentors to employ didactic models of instruction (Mackey et al., 2010). Mentors may assume this role if it is consistent with their role expectations. Alternatively, mentors may decline mentees' requests if these fall outside mentors' role expectations (in this case, the lack of social congruence may prevent the mentor from changing the nature of their role). Mentees who expect mentors to assume a directive role may still value the benefits of the cognitive transaction and mentors' ability to scaffold learning. However, in the absence of a trusting relationship, mentees remain unlikely to disclose learning gaps. We predict that mentees, in seeking social congruence, may pursue alternative sources of help (e.g. a friend or classmate) or abandon the peer learning programme earlier.

Scenario 4: no cognitive or social congruence

Without social and cognitive congruence, both PAL partners remain likely to disengage from the PAL programme. Making PAL attendance compulsory will limit students' choices to disengage physically, although they remain likely to mentally abandon PAL. If the relationship develops at all, mentors may dictate rather than guide learning. Mentees are unlikely to feel sufficiently secure in the relationship to risk the shame or fear of disclosing learning gaps. Mentees remain likely to hide the very developmental gaps that they would most benefit from addressing. Mentors may remain distant and unapproachable, and their actions may actively discourage self-efficacy. Such attitudes may undermine students' belief that they can succeed in academic life. In the absence of empathy in the PAL relationship, we anticipate few, if any, psychological benefits.

This scenario would cause most damage for students because of the high risk that mentors may offer inappropriate or wrong advice. Mentors fail to scaffold learning or connect with their mentees – in either the cognitive or social domains. Mentees may seek help only as a last resort and their help-seeking may be limited to very specific questions on assessment tasks. Evaluations of the programme may reflect mentees' dissatisfaction with mentors (wrong advice, ineffective, not worth attending). If mentors offered wrong or inappropriate advice, mentees are more likely to negatively value the programme.

Two levels of dissonance

Based on the discussion of the scenarios, we predict under some circumstances dissonance will occur: between mentor and mentee (i.e. lack of congruence), and between the dyad mentor-mentee and the objectives of the PAL programme. When cognitive and/or social congruence are absent in PAL, mentor and mentee operate from opposite ends of the cognitive/social congruence spectrum. In the absence of social congruence, mentees may perceive mentors as socially different. Consequently, the learning relationship may become aligned to an expert tutor-student interaction instead of producing mutually beneficial outcomes. Without cognitive congruence, the cognitive partnership is negatively affected by mentors' limited ability to scaffold and address learning gaps from an expert student perspective. The relationship may shift towards an expert-student interaction if internal and external factors unduly influence the relationship. In both cases, the actual dynamics and outcomes of PAL deviate from the intended objectives. Moreover, mentor and mentee can be socially and/or cognitively congruent, yet still engage in learning interactions that result in limited learning and social outcomes for both parties (e.g. non-transferable skills).

The dissonance between the mentor-mentee partnership and the intended outcomes of the PAL programme may be caused by motivational factors, lack of appropriate mentor metacognitive knowledge, or external influences. For example, mentor and mentee may achieve cognitive congruence, but their motivational set and role expectations may contrast with PAL objectives (i.e. mentors assume a directive role and mentees assume a passive role). Similarly, mentors who lack appropriate metacognitive awareness and language may possess limited capability to enhance mentees' metacognitive skills – despite their social and cognitive congruence. Finally, even relationships characterised by social and cognitive congruence may become dissonant with intended outcomes if pressured by external factors, such as looming assignment due dates.

Effective relationships: implications for PAL research and implementation

We recognise that social and cognitive congruence enhance mentors' and mentees' learning outcomes. An effective relationship is characterised by the presence of both types of congruence and the mentors' capacity to align role expectations and motivations with

PAL objectives. However, the effect of internal and external factors to the relationship may influence congruence levels.

We propose that imbalanced levels of congruence may result in asymmetrical relationships that derail the relationship from the original focus on mutual benefit. Lack of cognitive congruence, paired with unrealistic expectations about the mentor's role, may result in asymmetrical relationships where mentors tend to impart knowledge rather than guide learning. Conversely, lack of social congruence may produce relationships where the learning needs of mentees remain poorly addressed. Our model proposes that longitudinal research studies could identify variations in social and cognitive congruence that potentially risk the establishment of effective relationships.

Previous research shows that mentors and mentees may differ in their perceptions of learning and psychosocial support received – and provided (Holt and Berwise, 2012). Mentors tend to positively evaluate the quality of support they provided to mentees, while mentees evaluate the quality of support at lower levels. Eventually, mentees' perceptions are critical to the success of the programme, and congruence needs to be positively perceived by mentees to enhance relationship outcomes. The importance of mentees' perceptions raises the question of whether mentors need to be 'real' cognitive and social partners. Perhaps a mentor's ability to appear as socially and cognitively congruent may be more important than the actual level of cognitive development and social similarity with mentees. Further research could investigate what skills are employed by mentors to be perceived by mentees as socially and cognitively congruent partners. Mentor training could emphasise the importance of developing congruent partnerships. In particular, training could enhance mentors' ability to employ social and metacognitive skills related to mentees' perceptions of congruence. Research on mentoring relationships could also investigate mentors' and mentees' discrepancies in their perceptions of congruence, and analyse potential mediating variables that affect mentees' perceptions of congruence. Ongoing evaluation of congruence – employing longitudinal research methodologies and measured at different stages of the relationship – will ultimately enable timely interventions to restore congruence levels.

Previous literature recognises the central role of developing trust between PAL partners (Mackey et al., 2010; Eller et al., 2014; Bouquillon et al., 2005). In our conceptual framework, we acknowledge trust as a defining characteristic of social congruence.

However, an excessive focus of mentors on developing trust may also carry potential negative consequences. Mentees may become overly dependent, while mentors may cross role boundaries and provide support that exceeds role expectations. Consequently, the focus on enhancement of mentees' independent learning skills may be lost.

Our conceptual model provides a research framework to investigate the development of periodic and continuous social and cognitive congruence in PAL relationships. Without such developmental studies, deviation from intended outcomes over time might not be detected. Furthermore, the causal factors that influence strong levels of congruence would remain undiscerned. In addition to research on varying congruence, there are practical applications for this framework. Our model predicts that mentor selection and training to engage with varying levels of congruence could more effectively communicate the educational and psychosocial functions that define the mentor's role.

Finally, the role of internal and external factors – presented in this conceptual framework – shows potentially mediating variables of relationship outcomes in PAL. Role expectations and motivations mediate mentors' and mentees' engagement, behaviour and, ultimately, PAL outcomes. Specific interactions of motivational variables, role expectations and congruence levels, however, remain unclear. Similarly, environmental variables and mentors' and mentees' metacognitive skills hold promise as predictors and mediators of mentoring relationships and outcomes. Moreover, the interaction of internal and environmental factors on mentoring could provide a comprehensive research framework to investigate the complexity of peer learning processes and outcomes.

Conclusion

The mentor-mentee relationship is critical to the success of PAL programmes. The nature and dynamics of the relationship influence the support mentors provide and quality of learning outcomes. We defined effective relationships as the balanced presence of social and cognitive congruence between mentor and mentee. Mentors' ability to connect cognitively and socially with mentees – and to be perceived as congruent – provides students with a learning partnership that is qualitatively different from other learning interactions. While balanced mentoring relationships provide mutual benefits, environmental and student-related factors may negatively affect congruence levels and,

consequently, learning and psychosocial outcomes. For PAL programmes to effectively deliver beneficial outcomes for all parties, we require comprehensive support for mentor-mentee relationships.

Our conceptual framework provides a diagnostic tool that acknowledges internal/cognitive and environmental influences on PAL. Longitudinal research methodologies that collect data during various stages of the relationship will aid our understanding of the role of relationships and their impact on PAL outcomes. Factors that may hinder PAL outcomes – like role expectations and motivation, metacognitive skills, and environmental factors – can be included in studies that examine the impact of mediating variables on PAL processes and outcomes. The mentor-mentee relationship, hidden in plain sight within PAL schemes, is critical to the theoretical and practical development of PAL programmes. This paper provides a conceptual framework of effective relationships and hindering factors that can be employed to contribute to the advancement of PAL research and practice.

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