ANALOGUE AND DIGITAL MINDSETS: SOME IMPLICATIONS FOR INTERCULTURAL COMMUNICATION BETWEEN WESTERN AND EASTERN ORGANISATIONS

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ABSTRACT

Globalising forces have given rise to new relationships between organisations operating in Eastern and Western cultural contexts. Despite the rich opportunities presented by globalisation, the literature indicates that managers are challenged by the complexity of intercultural communication. This scholarly paper discusses some implications of analogue and digital mindsets for the managers of organisations in which effective intercultural communication across Eastern and Western contexts is crucial. We do so by adopting a multidisciplinary approach to the phenomenon and suggesting how managers may capitalise on knowledge related to analogue and digital mindsets to foster creative and holistic approaches to communication.

Keywords: analogue and digital mindsets, intercultural communication, cross-cultural management in Eastern-Western contexts

INTRODUCTION

Globalisation has given rise to higher incidences of cross-border trade, the Internet, global investments and faster, cheaper travel. As a result, many organisations have been able to cultivate strategic international relationships with clients, investors and suppliers (Gupta & House, 2004; Rossen, Digh, Singer, & Phillips, 2000, p. 21; Stohl, 2001, p. 324, 365). For example, within the last two decades, the People's Republic of China's (hereafter PRC) flourishing market-based economy has generated new business relationships with not only its Japanese and Korean neighbours but also Western businesses (Chung, Eichenseher, & Taniguchi, 2008, p. 122). Such relationships span almost all known industries and major organisations, including Boeing, Northwest Airlines, United Airlines, Blue Point Capital, Lucent Technologies, GlaxoSmithKline in the U.K. and Motorola (Grage, 2004).

Both face-to-face and online communication have been influenced by the increasing cultural diversity of employee demographics and the increasing likelihood of interactions with other employees around the world. Investors can only hope that the intensification of strong partnerships between Western and Chinese organisations will improve upon what Beamer (1995, p. 143) has argued amounts to 200 years' worth of business communication, which has traditionally been characterised by problems arising from mistrust. Given these circumstances, it is unsurprising to find that intercultural communication competence, defined as the extent to which individuals communicate in an effective and appropriate manner with those who are culturally dissimilar (Lustig & Koester, as cited in Penington & Wildermuth, 2005), is widely considered a key factor in the success of globalised workforces in the 21st century (Peng, 2006, p. 38). Researchers, managers and professional developers all have a stake in understanding the implications of communicating competently from social, cultural, psychological and linguistic perspectives (Peng, 2006, p. 38). Compelling evidence suggests that effectively managed intercultural communication is not only beneficial to organisations and their growth (Cacioppe, 1998, p. 44; Rossen et al., 2000, p. 25; Tung & Thomas, 2003, p. 116) but also critical to their very survival. However, the task is complex, and the implications are far reaching.

The literature suggests that there is hardly an area of organisational practice that is not influenced by culture and cultural beliefs, although many employees continue to assume that their co-workers share the same mindsets (see Fisher, 1996; Hayashi, 1994; Nisbett, 2003). How individuals envision their personal and organisational goals (Gardner, 1990, p. 11–22) and form judgments about risk taking, the wisest way to respond to power, who can or cannot be trusted and approaches to planning and timing are all governed by culture (Hofstede, 2001; Lewicki, Barry, & Saunders, 2007; Macduff, 2006, p. 32). Effective intercultural communication has also been associated with improved problem solving and decision making (Cacioppe, 1998, p. 44; Melkman & Trotman, 2005, p. 4; Rossen et al., 2000, p. 25; Tung & Thomas, 2003, p. 116). In addition, prior research (Chung et al., 2008, p. 121; Erdener, 1996) has revealed that business ethics (in terms of how concepts such as moral principle, equity, fairness and individual rights are understood) will also differ between the Confucian East and the West. The greater the cultural, psychological, economic and educational differences between the two regions, the more difficult successful communication is likely to be (Beamer, 1995, p. 141).

According to Beamer, intercultural communication errors are extremely costly to organisations (Beamer, 1995, p. 141). If cultural issues are poorly managed, the consequences include a demotivated staff and a diminished likelihood of forging vital international alliances (Hoecklin, as cited in De Anca & Vázquez, 2007, p. 84). Culture not only can give rise to conflicts with destructive outcomes for

global and culturally diverse organisations but also influences the workers' perceptions of the most appropriate way of resolving these conflicts (Ren & Grey, 2009). Although organisations acknowledge the value of developing cultural expertise to avoid the costs that mistakes in intercultural communication can generate, the literature suggests that too few managers have anything but the most rudimentary grasp of international and cultural issues (Parry & Proctor-Thompson, 2003; Suutari, 2002, p. 218–226). Thus, globalisation has intensified the need for business people to "become more knowledgeable about how people from different cultures can communicate effectively and appropriately with each other" (Peng, 2006, p. 38). Doing so is important to both Eastern and Western organisations and provides a clear rationale for continuing to explore how people can co-create meaning and understandings in intercultural spaces.

Analogue and digital conceptions have been described as fundamental differences in the way individuals see and understand the world (Blachowicz, 1997). Scholars commonly illustrate these two concepts by considering the displays of clocks or watches. An analogue clock indicates the time with hands that point to hours and minutes that move around a clock face on a continual basis such that one can read the time by observing the positions and relationship of the hands. Therefore, time is represented in a graphical form or what Mather (2006, p. 20) refers to as a "pictorial representation". Paivio (1986, p. 16) also described analogue representations as being "picture-like" in much the same way that "photographs, drawings, maps and diagrams" are. It is undoubtedly this quality that leads Watzlawick, Beavin and Jackson (1967) to consider them to be "self-explanatory" in nature. In contrast, a digital clock has numbers ranging from 0 to 9 that are coded to indicate the time. These numbers were described by Pavio (1986, p. 16) as "language-like". According to Gregory (1994), analogue representations can be considered holistic and continuous whereas digital representations are more analytical, presumably because one needs to be able to interpret the spatial pattern between the two hands on the clock face to know what time it is at any given time (Noma & Crossman, 2010). This paper discusses the conceptualisation of analogue and digital mindsets and the potential implications for intercultural communication. We make specific references to organisations in which high levels of interaction are required between Eastern and Western workers and executives.

MULTIDISCIPLINARY CONCEPTIONS OF ANALOGUE AND DIGITAL MODES OF PERCEPTION

The title of this paper refers to analogue and digital "mindsets" because of the work of Fisher (1996). Fisher (1996) argues that mindsets represent cultural differences in the way individuals understand the world whereas Senge (1990)

refers to individual differences in the ways people perceive the world as mental models. However, both mental models and mindsets refer to mechanisms that are used to understand and respond to the world and the particular situations that occur (Senge, 1990, p. 164). Fisher's (1996) conceptualisation of the mindset states that it consciously and unconsciously determines the phenomena (particularly cultures) that individuals will attend to and the phenomena that individuals are more likely to ignore or overlook (Fisher, 1996; Hall, 1976; 1983; 1998; Nisbett, 2003; Nisbett & Miyamoto, 2005). Thus, although the functional aspects of perception and cognition operate in the same way amongst human beings, mindsets will not necessarily be consistent across cultures (Fisher, 1996; Nisbett, 2003). Therefore, one function of culture appears to involve the framing of perceptions and cognition in particular ways that will differ across cultures (Fisher, 1996; Hall, 1976; 1983; 1998; Nisbett, 2003; Nisbett & Miyamoto, 2005).

A number of disciplines, including psychology, philosophy (Blachowicz, 1997), neurophysiology, communication and linguistics, have examined how people interpret the world through analogue and digital representations, though scholars have not consistently adopted the terminology 'analogue' and 'digital' (Noma & Crossman, 2010). Beamer (1995, p. 142) posited that, whereas psychology and linguistics scholars have been primarily interested in why and how communication generates meaning, philosophy scholars have attempted to ascertain what meaning is per se, and although many have connected meaning to language, it is generally accepted that "communication is more than simple equivalencies between word and thing" (Beamer, 1995, p. 142).

How people communicate across cultures is arguably affected by analogue and digital mindsets, which Paivio (1986, p. 58) maintains incorporate the functioning of the five senses into perception. Analogue and digital mindsets also play a part in understanding how individuals perceive situations from an emotional or subjective standpoint. For example, analogue representations help individuals to appreciate gradations in emotions (Shore, 1996, p. 274) because these representations rely on "direct sensory experiences" that are perceived holistically (Hayashi, 1994, p. 82; Hayashi & Jolley, 2002, p. 180). In this manner, people develop an intuitive feel for reality (Hayashi, 1994, p. 82) in ways that cannot be understood if phenomena are represented in a digital mode (Noma & Crossman, 2010). In contrast, digital representations are concerned with creating boundaries, being systematic and "generating categories" (Shore, 1996, p. 274). Additionally, digital representations are related to matters of accuracy (Blachowicz, 1997), logicality, complexity and abstraction (Watzlawick et al., 1967).

Within the field of neurophysiology, dual knowledge theory also suggests that these two contrasting ways of processing and organising information are

understood as integrated but distinguishable realities within the hemispheres of the brain (Edwards, 1979). The theory refers to "apprehension" and "comprehension" (Kolb, 1984, p. 48). Apprehension is associated with empirically based perceptions and cognition involving pattern formation and the grouping of phenomena, which are governed by the right hemisphere; in constrast, comprehension is associated with the abstract, analytical and verbal understandings that are governed by the left hemisphere (Kolb, 1984, p. 48). Blachowicz (1997), Edwards (1979) and Kolb (1984) acknowledge that both forms of perception are equally necessary and evident to some extent in most forms of human activity. The analogue and digital mindsets within individuals appear to co-exist in complementary ways, even though one mindset may have a more dominant influence depending on one's culture (Noma & Crossman, 2010).

More recent research is useful for considering the implications of analogue and digital mindsets, even though not all researchers use these terms, as previously indicated (Chua, Leu, & Nisbett, 2005; Masuda & Nisbett, 2006; Nisbett, 2003; Nisbett & Miyamoto, 2005; Norenzayan, Smith, Kim, & Nisbett, 2002). For example, Masuda and Nisbett (2006) found that Americans will notice changes in salient objects per se but that Japanese people tend to notice changes in the relationships between objects. A study by Chua et al. (2005) suggests that Americans are more likely to identify key individuals in events but that Chinese and Taiwanese people are drawn to observing events as a whole and paying attention to the emotions involved. Norenzayan et al. (2002, p. 654) noted that Chinese and Korean people tend to use an intuitive, experience-based, holistic cognitive system but that Americans adopt a more "formal", rule-based, logical cognitive system. Noma and Crossman (2010) argued that the research findings along these lines appear to indicate that by paying attention to the context and relationships between objects, East Asian cultures seem demonstrate an analogue mindset. Furthermore, their concentration on salient objects, independent of their context, suggests a predisposition to digital mindsets. These ideas seem to resonate well with Fang's (2010) observation that Western thoughts and management tend to have an "either-or" digital approach, which would not often apply to Asian contexts, where a "both-and" analogue approach would more likely explain the Asian mentality. Scholars have yet to demonstrate whether these broad assumptions are moderated by Chung et al.'s (2008, p. 123) postulations, which state that Confucian values vary in time and space in the way that they influence business practices. Additionally, Chung et al. claim that, as a result of the global capitalist economy, young, educated Chinese, Japanese and Korean individuals (presumably including executives) have gravitated towards Western models of business practice and therefore to Western ways of perceiving situations, to some extent. As a result of these differences, Meyer (2006) argued that the management theories developed in Western contexts will not always capture or explain issues in Asian contexts. The author further suggested that the

research on management in Asian contexts should reflect Asian thought to develop theories that can apply to the local context.

"O-TYPE" AND "M-TYPE" ORGANISATIONS

By examining the organisational principles of multinational corporations over a period of twenty years, Hayashi (1994) drew upon analogue and digital mindsets to differentiate between "O (organic)-type" organisations and "M (mechanistic)-type" organisations. According to Hayashi (1994), in "O-type" organisations, analogue information is more likely to be shared and to play a critical role within the organisation. Because employees tend to pay attention to all surrounding information in an analogue manner, these ways of perceiving are reminiscent of high-context communication, as theorised by Hall (1976; 1983). Hayashi (1994) also maintained that "M-type" organisations are more likely to focus on digital information in a manner similar to those operating in low-context cultures might. Specifically, in low-context cultures, information is communicated in explicit, verbal expressions; however, in high-context cultures, information is communicated indirectly (Hall, 1976; 1983). The implications for organisations and executives in the East and their communication with those in the West are significant. One example of how such differences may play out in a practical context is that in "O-type" organisations, job boundaries are quite blurred such that individuals can respond to tasks in a fairly flexible manner (i.e., in a manner that they deem appropriate), largely because organisational members understand the context and share the analogue information in ways that would be difficult for those with a digital mindset to understand (Hayashi, 1994; Noma & Crossman, 2010). Such understandings about roles are quite different from those that occur in "M-type" organisations, where job descriptions are strictly determined in terms of contracts, rules and policies that are explicitly communicated (Noma & Crossman, 2010).

Hayashi (1994) also noted that Japanese expatriates who have analogue mindsets rely on social norms, experiences and knowledge that are inherently tacit. This information is not often explicitly stated and is not easy to communicate and transfer to local subordinates. Drawing upon the framework of knowledge transfer presented by Bhagat, Kedia, Harveston, and Triandis (2002), Peltokorpi (2006, p. 140) also maintained that "East Asians emphasize the significance of tacit knowledge" and that Westerners prefer "rational analysis based on codified written information." Sharing and transferring tacit knowledge is problematic (Kogut & Zander, 1993) because such knowledge "is very difficult to articulate" (Nonaka & Takeuchi, 1995, p. 104) and "is important not because it cannot be articulated, but because it has not been articulated yet" (Shin, Holden, & Schmidt, 2001, p. 337). In the subsidiaries of multinational corporations, tacit knowledge

may also present a challenge that expatriates are likely to face because if "knowledge is complex and difficult to codify, multinational corporations often send expatriates to perform key functions and train local employees" (Chang & Rosenzweig, 1995). In contrast, explicit knowledge can be coded and transferred by documents and manuals (Kogut & Zander, 1993). Nonaka and Takeuchi (1995) further argued that the interactions between tacit and explicit knowledge can be key to the creative capabilities of organisations. Consequently, for managers who are operating in culturally diverse workforces and who are routinely involved in transnational assignments, it is also imperative to have the skills to achieve effective communication among people with different mindsets and to capitalise on the potential for diversity to enhance the company's competitive advantage (Nonaka & Takeuchi, 1995).

Chang and Rosenzweig (1995) argued that the tendency to rely on documents and manuals rather than, for example, side-by-side training sometimes impedes effective communication and knowledge transfer in a subsidiary of a multinational corporation. This argument implies that a digital way of communication does not always work efficiently and that an analogue mode may be more suitable for certain tasks. More likely, a balanced response to organisational learning between analogue and digital approaches is advisable, given that the cultural profiles among employees vary. Noma and Crossman (2010) have also drawn attention to Spence's (1973, p. 481, p. 484) observation that in an analogue mode of communication, what someone *does* is perceived to be much more relevant than what he or she says or writes, but in digital modes of communication, the latter is more relevant. Imagine the complexity of intercultural communication if someone with a digital mindset works in an "O-type" organisation in which analogue information is a vital aspect of decision making and in which some concepts are considered to be shared but nevertheless inexpressible and difficult to quantify (Spence, 1973, p. 482).

In global and diverse organisations in which employees from Western and Eastern cultures will need to communicate effectively with one another, there are clear challenges in the form of paradigmic differences or what Hidashi (2004, p. 2) refers to as "mental programming" in analogue and digital mindsets. The transfer of information from an analogue to a digital mode could prove to be difficult, if not impossible (Hayashi, 1994; Hayashi & Fukushima, 2003; Hidashi, 2004; Spence, 1973; Watzlawick et al., 1967; Wilden, 1972). Even if an employee from 'the East' speaks in English to his or her colleagues from the United States, that person will still have an analogue mindset, which will differ from the digital mindset of a native English speaker (Hidashi, 2004). A study (Buckley, Carter, Clegg, & Tan, 2006) that investigated how knowledge is transferred in foreign multinational corporations within the PRC revealed that a common language is essential but not sufficient for effective communication and

the transferring and sharing of knowledge in intercultural contexts. Rather, successful communication depends on whether communicators "share the internal, cognitive capabilities that translate the articulated messages into the intended meanings," and according to the literature cited by Buckley et al. (2006, p. 49–51), those from the same national culture will tend to share tacitly understood knowledge for this reason. Nisbett (2003) also observed that the patterns of learning and thinking acquired through culture are unlikely to be changed.

SOME POSSIBLE ORGANISATIONAL RESPONSES TO ANALOGUE AND DIGITAL MINDSETS

As indicated earlier, Fisher (1996) suggests that mindsets affect not only what and how people communicate but also the pieces of information that they are likely to attend to and to ignore. With respect to intercultural communication, analogue and digital mindsets give rise to fundamental differences and ultimately, ineffective communication between individuals and groups (Hayashi, 1994; Hayashi & Fukushima, 2003; Hidashi, 2004). Hayashi (1994) argues that these communicative dilemmas are also apparent in organisations, particularly Japanese multinational corporations. In these contexts, although Japanese expatriates who have analogue mindsets will regard tacit knowledge of social norms, experiences and knowledge as crucial to their development within the company, this perspective cannot be easily communicated or developed amongst local, non-Japanese subordinates who have digital mindsets (Hayashi 1994). One potential consequence of this communication dynamic is that the local subordinates may perceive the communication and decision-making processes to be neither open nor clear within Japanese multinationals (Hayashi 1994) operating in cultural contexts in which the locals predominantly have digital mindsets. These differences in communication styles and approaches to obtaining information and knowledge could hinder not only effective communication but also trust building, which is correlated with open communication (Huang & Van de Vliert, 2006).

Nisbett (2003) suggests that it is difficult, if not impossible, to change the learning patterns and thinking styles that a person obtains through his or her culture. Even if people move to another country, they are likely to continue to see, think, communicate and learn as they did in their home country (Hayashi, 1994). Therefore, understanding how analogue and digital mindsets work in organisational contexts in which Easterners and Westerners are brought together is important in terms of communication. Furthermore, as suggested elsewhere (Noma & Crossman, 2010), the differences could enhance the effectiveness of the communication process and generate creativity in multicultural teams.

Chen's (2002) description of a "paradoxical integration" appears to be more meaningful when addressing these two mindsets in an integrated or balanced manner rather than a mutually exclusive manner. The implications will certainly need to be considered when planning professional development workshops. In these types of fora, one may develop sensitivity to and an understanding of analogue and digital mindsets by asking employees to role play a mindset other than their own. For example, one may ask, "How might a person with a digital mindset think, frame or respond to this issue?" or "What would be the analogue approach to this issue?" (Noma & Crossman, 2010). This type of activity may be undertaken by adopting a role-playing process somewhat similar to that suggested by De Bono (1986) in *Six Thinking Hats* except that the individuals in this context would use role play to consciously apply analogue or digital thinking to an issue or problem. Case studies that encourage individuals to explore analogue and digital management approaches to problems are also likely to enhance creative and holistic thinking.

Noma and Crossman (2010) encourage managers to consider the possible outcomes of applying one mindset to a problem more strongly than another. Additionally, the researchers ask managers to consider how a particular interpersonal conflict could be connected to differences in the dominance of digital and analogue mindsets. As Noma and Crossman (2010) indicated, asking these types of questions leads to expansive responses to issues in respectful and inclusive ways that are more useful than bipolar conceptions of analogue and digital mindsets. According to Triandis (1995), cross-cultural training tends to be more effective if an individual has the opportunity to think and behave in ways that someone with an alternative mindset might.

Practicing a type of behaviour is more likely help modify the behaviour than simply appreciating how someone with an analogue or digital mindset may respond to a particular situation (Triandis, 1995). For this reason, it is worth undertaking an experiential approach that requires one to obtain practical experience in organisations in which the dominant approaches to communication, information and knowledge sharing and decision making are unlike an individual's normal approach (in terms of analogue and digital mindsets). Appropriate support and clear direction (i.e., in terms of how such learning may be fostered by the host organisation) would quite obviously play an essential role in the success of this type of experience.

In addition to focusing on behaviour, Triandis (1995) also suggests that cross-cultural trainers encourage employees to consider the affective (i.e., in terms of exploring how individuals "feel" about the target culture and developing positive responses) and cognitive (i.e., in terms of develop "understanding" and "knowledge") perspectives of analogue or digital mindsets. Adopting multiple

approaches to professional development in analogue and digital mindsets not only in terms of the affective, cognitive and behavioural perspectives but also in terms of drawing on all senses in activities requiring individuals to consider information communicated in a visual (i.e., in terms of words or pictures), auditory or tactile manner may also capture the possibility that analogue and digital mindsets influence how people learn. Activities that respond to the senses in training settings would also operationalise Paivo's (1986) work on the connections among the senses, perceptions and analogue and digital mindsets.

CONCLUSION

The positive outcomes of globalisation (in terms of generating new opportunities for international organisational relationships) are well documented, but any success will rely on effective intercultural communication amongst individuals and organisations because, as demonstrated in the introduction, the quality of intercultural communication influences almost all conceivable business activities. This paper argues that analogue and digital mindsets are strongly influenced by culture and are fundamental to the way people understand and perceive the world as well as communicate with one another. The literature suggests that differences between analogue and digital mindsets are observable among individuals from the East and the West. According to Hayashi (1995), analogue and digital mindsets can also be identified in relation to whole organisations as well as individuals. Within organic organisations, analogue information is likely to be shared, but in mechanistic organisations, information will tend to be communicated digitally. This paper suggests that in the context of Asian multinationals operating in countries such as Australia or New Zealand, some communication issues are likely to arise among individuals and organisations in which both analogue and digital mindsets exist. The real question for managers is as follows: how does one create an organisational culture in which these different mindsets can productively co-exist? In organisations in which the presence of analogue and digital mindsets is not understood, acknowledged and embraced, the potential contributions of individuals and improvements in organisational performance may go unnoticed and remain undeveloped.

Thus, cross-cultural training and professional development play a crucial role in reducing the possibility of miscommunication and, by extension, the possibility of conflict (Ting-Toomey & Oetzel, 2001). Although we suggested some ways through which professional developers might develop understandings and practical applications in relation to analogue and digital mindsets from the cognitive, affective and behavioural perspectives, almost no studies or empirical research appear to specifically focus on how managers and developers can address analogue and digital mindsets as a communication issue of great import

to global organisations. Educators may bring techniques such as experiential forms of learning or draw on multiple ways of presenting training materials to account for varied learning styles, which are more likely to capture the different ways that those with analogue and digital mindsets may engage in learning. However, without empirical studies in professional development contexts, managers and developers must experiment with currently available methods. Additionally, trainers will need to draw upon their understanding of analogue and digital mindsets to develop specific materials and activities that focus on these mindsets rather than on facilitating intercultural communication in general. To our knowledge, no specific materials for this purpose have been developed, published or tested.

It is worth using case studies to facilitate both analogue and digital solutions to problems and to help people obtain practical experience in organisations in which the dominant approach to communication, information and knowledge sharing and decision making is unlike an individual's normal approach (in terms of analogue and digital mindsets). Appreciating multiple perspectives in organisations in these ways is likely to enhance communication, develop creativity, improve competitiveness in the market and ultimately lead to more sustainable global relationships. However, the process would not require one to change his or her personal mindsets from analogue to digital or vice versa. Rather, the process would cause one to appreciate diversity in this regard and to learn how to use strategies that could capitalise upon this diversity.

Developing strategies, materials and activities that can be used to educational and training contexts will also be more deeply informed by wider empirical research on the construct of analogue and digital mindsets. In other words, a shift needs to occur from the publication of conceptual papers (like this one) to the publication of those that report empirical findings that rigorously test hypotheses that are implicitly raised, for example, in Hiyashi's (1994) work. Future research would also be most beneficial if it builds on the existing psychological, neuroscientific, linguistic and philosophical literature and considers analogue and digital mindsets through the lens of management and applied communication disciplines. Future studies should focus on the practical implications of analogue and digital mindsets in the contexts of, for example, intercultural teams, decision making, creativity in organisations and problem solving.

Moreover, the role and impact of national cultures in relation to analogue and digital mindsets have tended to be concerned with Japanese and Western companies (Yoo & Torrey, 2002, p. 422) rather than companies from other Asian countries. Despite some similarities in the cultural constructs applied to the East and the West, we cannot assume that the literature that confines itself to Japanese

cultural contexts will be applicable in the same way to other national cultures in the Asia-Pacific region.

The conceptual development of analogue and digital mindsets has drawn upon multiple disciplines, and the published literature has raised some compelling arguments that demand further attention from educators, trainers and managers. However, the promise of this line of enquiry for managers will likely never be realised without further empirical research testing the following: 1) the construct of analogue and digital mindsets, 2) applications to organisational communication contexts and practices and 3) the effectiveness of training, teaching and learning methods and materials.

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