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SECTION: ARTICLES

Using Whole Brain® thinking to inform lecturer identity in family medicine: a position paper

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ABSTRACT

This paper serves as a conceptualisation of how the principles of Whole Brain® thinking can be used to inform lecturer identity. The objective of this position paper is to engage discourse on the educational professional development of early-career academics in health sciences. It is about laying a scholarly foundation for self-study. As a scholarly community of practice in family medicine we wanted to determine to what extent the literature – theoretical framework – is silent on innovative means to ensure that academics take responsibility for their development, using self-regulated learning and self-empowerment. In our search for literature on theories of professional learning we came across the theory about Whole Brain® thinking. Our action research initiatives revolve around the notion of individuals' preferences for different modes of thinking. Our preferred modes of thinking inform our teaching practice and lecturer identity.

Keywords: lecturer identity formation; self-regulated professional learning; Whole Brain® thinking; Whole Brain® action research; Whole Brain® participatory action research.

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Usando o pensamento Whole Brain® para informar a identidade do professor em medicina de família: um documento de posição

RESUMO

O presente artigo busca uma conceitualização sobre como os princípios do pensamento holístico (ou baseado no modelo Whole Brain®) podem ser usados para informar a identidade do professor. O objetivo deste artigo de posição é envolver o discurso sobre o desenvolvimento profissional educacional de acadêmicos em início de carreira nas ciências da saúde; trata-se de estabelecer uma base acadêmica para o autoestudo. Como comunidade de prática em medicina familiar, queríamos determinar até que ponto a literatura – quadro teórico – está silenciosa sobre meios inovadores para garantir que os acadêmicos assumam a responsabilidade por seu desenvolvimento, usando a aprendizagem autorregulada e o autoempoderamento. Na nossa busca por literatura sobre teorias de aprendizagem profissional, encontramos a teoria sobre o pensamento Whole Brain®. Todas as iniciativas estão em torno da noção das preferências individuais por diferentes modos de pensamento; os modos de pensar que preferimos informam a nossa prática de ensino e a identidade docente.

Palavras-chave: formação da identidade do professor; aprendizagem profissional autorregulada; pensamento holístico (ou baseado no modelo Whole Brain®); pesquisa-ação holística ou baseada no modelo Whole Brain®; pesquisa-ação participativa.

Uso del pensamiento Whole Brain® para informar la identidad del profesor en medicina familiar: un documento de posición

RESUMEN

Este documento sirve como una conceptualización de como los principios del pensamiento Whole Brain® pueden usarse para informar la identidad del profesor. El objetivo de este documento de posición es participar en el discurso sobre el desarrollo profesional educativo de los académicos en las primeras carreras de ciencias de la salud. Se trata de sentar una base académica para el autoestudio. Como comunidad académica de práctica en medicina familiar, queríamos determinar en que medida la literatura – el marco teórico – guarda silencio sobre los medios innovadores para garantizar que los académicos asuman la responsabilidad de su desarrollo, utilizando el aprendizaje autorregulado y el autoempoderamiento. En nuestra búsqueda de literatura sobre teorías del aprendizaje profesional nos encontramos con la teoría del pensamiento Whole Brain®. Nuestras iniciativas de investigación-acción giran en torno a la noción de las preferencias de los individuos por diferentes modos de pensamiento. Nuestros modos preferidos de pensamiento informan nuestra práctica docente y nuestra identidad como profesor.

Palabras clave: formación de la identidad docente; aprendizaje profesional autorregulado; pensamiento Whole Brain®; investigación-acción Whole Brain®; investigación-acción participativa Whole Brain®.

INTRODUCTION

Four early-career lecturers involved in health sciences education and an established academic formed a scholarly community of practice. The construct “community of practice” is widely used, for example by Ranmathugala et al. (2011) and Li et al. (2009). However, we prefer using the construct “scholarly community of practice” as used by Fringe (2013) as it elevates the work we do to a scholarly level, meaning that it is research-based, not activity-based.

I am the established academic and the author of this paper; I specialise in the professional development of university professors. Although I am the sole author, I am writing from a plural perspective. Our scholarly community of practice creates the space for continuous reciprocal professional learning; our lecturer identity formation is enriched as we learn from one another; our professional identity is enriched by wisdom coming from different sources, such as the African expression *Umntu ngumuntu ngabantu* – “owing to others we are who we are”.

The paper serves as a position paper foregrounding our theoretical frame for forthcoming publications. Our discourse on lecturer identity formation is an extension of work done by the department in question (Hugo et al., 2011; Hugo et al., 2013). Proof of evidence-based practice supported by a scholarship of teaching and learning is advocated. We are the early-career practitioners and the scholars of our practice at the same time. An early-career academic is considered a newly appointed member of staff that is not yet competent in enacting roles relating to teaching, research and community engagement, and in the first few years of their career (South Africa, 2018).

We focus on our teaching practice and related roles as stipulated in the Norms and Standards for Educators (South Africa, 2000) – roles integral to lecturer identity. They include responsibilities relating to facilitating and assessing learning, curriculum development, being a leader and a scholar, engaging in the well-being of self and of students, and subject specialisation. We added peer mentoring as yet another role. A construct that we found of value is “reverse mentoring” (Raza & Onyesoh, 2020; Che, 2013), which we will integrate with the conceptualisation of what we do and eventually the implementation. To develop all the roles, we embarked on a trajectory of educational professional development, the rationale being promoting professionalism.

Our context-specific promoting of professionalism was self-initiated. Our professionalism resonates with the professional learning culture of the University that is made clear in its vision and mission statement (University of Pretoria, 2021). Values that give direction to our scholarly thinking, teaching practice and research include developing people – self and peers; defining our identities; creating knowledge, based on an inquiry-led and evidence-based approach; promoting excellence; academic freedom, creative and innovative thought. These

values and the value of leadership, one of the roles we have to enact, are integral to our lecturer identity. It is fitting to take note of the work on leader identity formation (Skinner, 2020) as our latent leader potential concerns all the roles and values mentioned. Leadership shades all aspects of one's lecturer identity.

Meaning-making shared in this article is based on studying relevant literature. We agree with Snyder (2019) that a literature review is a research methodology. We work with constructs derived from theories pertaining to our professional learning. These include self-regulated professional learning, (co-)constructivism, modes of thinking, self-empowerment, attributes of the 21st century, scholarship of teaching and learning, and (participatory) action research. We construct meaning where gaps exist in the literature or where the literature is silent on the innovation and transformation we seek in practice.

We use self-study (Pithouse, Mitchell, & Moletsane, 2009) for the sake of developing as human capital. Self-study is dual: each of us looks into the actions of the "I"; as a collective we look into the actions of the "we". We take responsibility for self-empowerment and self-regulated professional development – to become an independent academic who takes ownership of maximising own potential (Slabbert, De Kock, & Hattingh, 2009; Du Toit, 2018).

ENVISAGED RESEARCH QUESTIONS

In traditional research it is common for a research problem to be identified and interrogated. Our stance is different. When coming across innovative ideas that we want to "try out", as McNiff and Whitehead (2006) suggest we do, we do so in an experimental fashion. We consider engaging an "innovative research idea" as a point of departure; we experiment with innovative ideas using Whole Brain® participatory action research as it allows for spontaneity and fluidness (McNiff & Whitehead, 2006). Our conceptualisation and scholarly justification for what we do and intend to do are fluid. This is evident in the research questions we have formulated. The list offers us fluidity in terms of what we as individuals or as a collective would like to focus on at a specific point in time.

The following principal research question is an umbrella made up of a number of constructs that spans our research:

Using the Herrmann Brain Dominance Instrument (HBDI®) (Herrmann, 1995, 1996) as diagnostic means, how can preferences for different modes of thinking be used to inform our lecturer identity that has (participatory) action research as paradigmatic approach to our scholarship of teaching and learning (SoTL)?

The secondary research questions are refinements of the principal question. Examples include the following:

- a) Who am I/are we as academics teaching a first-year cohort studying for a BCMP qualification?
- b) How can I/we use the principles of action research to inform my/our lecturer identity?
- c) How can I/we use the principles of Whole Brain® thinking to enrich my/our professional identity and my/our teaching practice?

Depending on the nature of a project, the focus is on one of the members of the team, using action research, or on the entire team involved in participatory action research – in the case of projects already being conducted. Either an envisaged project or projects will focus on a common innovative idea a member of the team or the entire team would like to investigate in future. All questions and complementing research project have the same common goal which Whitehead (2009) refers to as living theory. Our lived experiences become part of the theory we construct.

CONSTRUCT FRAME

Transforming teaching practice is an important act that underlies lecturer identity. It is, however, important to note that any of such transformation starts with the self (Du Toit, 2013). To help activating this, taking note of relevant learning theories is essential.

Learning theories

We base our research on learning theories that are bound to contribute to developing professionalism and lecturer identity. The focus of our discourse is on our professional learning, more specifically Whole Brain® professional learning. The principles of Whole Brain® thinking (Herrmann, 1995, 1996; Herrmann & Herrmann-Nedhi, 2015; De Boer, Du Toit, Scheepers, & Bothma, 2013) form the epicentre of our research. The adapted comprehensive model (De Boer et al., 2013) guides our transformation and research. This model holds that one's brain dominance is expressed in the way in which one thinks, learns, understands, solves problems and expresses oneself. These actions are based on cognitive preferences or preferred modes of knowing (Herrmann, 1995).

The metaphoric four quadrant model (Herrmann, 1995) (Figure 1) is based on brain research and exploring in depth the ways individuals learn. These ways are divided into four clusters of modes of thinking. They function together situationally and iteratively, making up a whole brain in which one or more parts become naturally dominant (Herrmann, 1995).

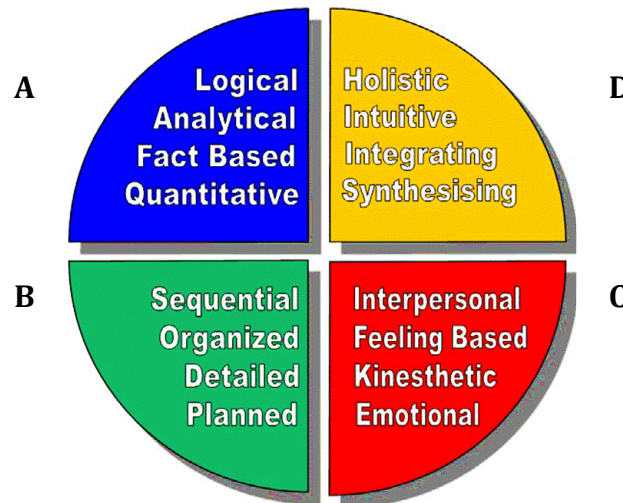


Figure 1 – A simple representation of the metaphoric Whole Brain® Model

Source: Du Toit, 2019.

The model represents Herrmann's (1995) understanding of the functioning of the brain. He identified four distinct modes of thinking, which he labelled quadrants, each indicated by the letter A, B, C or D. The A quadrant represents fact-based thinking – referred to as the *intellectual self*. This quadrant focuses on logic and analytical thinking that revolves around, for example, quantitative measures. The B quadrant represents sequential thinking – referred to as the *safekeeping self*. Thinking in this quadrant is, *inter alia*, about being organised, detailed and planned when executing tasks. The C quadrant is about emotive thinking – the *emotional self*. It deals with thinking in which interpersonal relations are prominent and feeling-based. Thinking and kinesthetic movement, for example, contribute to one's thinking when executing tasks. The D quadrant is about experimental thinking – *experimental self*. It is about thinking in a holistic fashion. It may include synthesising, integration, visuals and thinking intuitively. These modes of thinking inform, among others, one's approach to solving problems, communication and teaching. What should be pointed out is that the theory is about preferences and not about abilities.

Quality teaching takes place if the whole brain is involved. Diverse approaches to teaching are needed to increase the overall level of engagement with students and colleagues. Colleagues and students alike have preferences for different modes of thinking. This calls for using different approaches and means to accommodate others. As all four quadrants are present in any group of students, facilitating and assessing of learning should make provision for different modes of thinking, irrespective of one's own.

Herrmann's ideas led to new meaning-making of how the processes of monitoring one's professional development by means of self-enquiry can be enriched. It can be postulated that self-enquiry is a Whole Brain® process. It is dominantly C quadrant in nature as the focus is on the intrapersonal aspects of an individual. It is a planned process (B quadrant) and it is

experimental (D quadrant) with the outcome a contribution to making meaning – coming up with new facts (A quadrant): facts of self in terms of self-knowledge, and facts relating to teaching practice. Reflecting on the self becomes important.

Embarking on a trajectory of professional development requires reflecting on self. The notion of being a critical reflexive practitioner is addressed in numerous scholarly works, most often than not in literature that deals with action research, such as the work by Du Toit (2018); Kapoor and Jordan (2009); Burton and Bartlett (2005) and Zuber-Skerritt (2000). Our professional learning includes scholarly reflective practice, as used by Fringe (2013) and our reflection is intra- and interpersonal. It is built on the eponymous intelligences Gardner (1993) identified. Intrapersonal reflection sits well with action research, while interpersonal reflection is integral to participatory action research. The link between multiple intelligence and Whole Brain thinking is discussed in De Boer, Bothma and Du Toit (2015) which supports our approach to what we are doing as educational practitioners and scholars of our teaching practice.

Lecturer identity formation

Lecturer identity formation requires a high level of self-awareness. Self-awareness is about internalising what one is aware of regarding the self. It is an intrapersonal act of knowing and doing – how one presents as a unique persona.

The notion of maximising our potential, analogous to the ideas on maximising student potential (Slabbert et al., 2009), activates our thinking in a way that we consider maximising our lecturer identity formation as a continuous process of professional development. This process gives life to the abstract construct *lifelong* professional learning.

There are multiple scholarly works on identity formation in school contexts. Most identity traits that apply to school contexts are relevant in the context of higher education. Identity development is dynamic (Beijaard, Meijer, & Verloop, 2004) and an active and ongoing process (Pillen, Beijaard, & Den Brok, 2013). This complements our view of the fluidness of the professional trajectory in which we are immersed. The fluidness allows for a mix of attributes of our professional identity and inclusion of additional attributes, such as leadership.

Transformational leaders have an important role, namely to act as change agents (Gerwing, 2016). We consider ourselves as educational transformation leaders. However, there is a nuanced difference between changing and transforming. If we consider it imperative to transform the self, then it would be a contradiction if we simply act as agents of change. We share the view that one who has embarked on a trajectory of transforming the self and one's practice should act as an agent of transformation – eloquently put in a poem by Du Toit (2018).

Our acting as agents of transformation has been seriously affected by the current global covid-19 pandemic. The pandemic and its consequences, such as lockdown regulatory restrictions impacted the University as an eco-system and our leadership and lecturer identity formation. We experienced the real-life challenges we had to face daily, such as changing from contact to online teaching, similarly to what is experienced on a global scale by other higher education institutions, and in health science education (Armstrong-Mensah, Ramsey-White, Yankey, & Self-Brown, 2020).

RESEARCH DESIGN

As alluded to above, the core research method used for this paper is literature study as Snyder (2019) asserts.

In searching for innovative ideas about action research and participatory action research, we chose the model of Randewijk (2020); we do appreciate the work of scholars such as Smit (2020), who combine the notion of Whole Brain® thinking with action research. Their ideas are derived from the work of Du Toit (2013), who coined new constructs such as *Whole Brain® action research* and *Whole Brain® participatory action research*. Our research design is made distinct by using these constructs that are embedded in our construct frame.

Most often than not research approaches complement action research designs. One can classify the research approaches relevant to our research as micro-theory (Wall, 2016) as it deals with issues of work life at the level of individuals and one group. Our research is auto-ethnographic in nature as far as an individual is concerned and ethnographic as far as the entire team is concerned as is explained in the work of Babbie (2013); Du Toit (2018) and Wall (2016). The construct *ethno* is used in the sense that our practice forms an integral part of the culture of the University, our faculties, our departments and our fields of specialisation.

The study design is refined in terms of our position as the researchers. We focus on the “self” and the “we”. We consider our thinking preferences as a cognitive positioning. Qualitative and quantitative data of our thinking preferences serve as baseline data for our research. The research method used to gather this baseline data is discussed next.

Research methods

An array of research methods should be used to answer research question(s) that may be applicable to a specific project. The method explained next is included in this position paper as it generates baseline data that will be applicable to all the projects to be conducted. In identifying thinking preferences, the HBDI® is employed to generate the most important data. The HBDI® consists of 120 items (Coffield, Moseley, Hall, & Ecclestone, 2004). It has been identified as an instrument that has significance for education. Its validity and reliability have

been proven based on data on a cohort of over 2 million people who have completed it across the globe (Coffield et al., 2004). The way in which qualitative data is generated is discussed next. It gives an overview of what brain profiling is about. Hypothetical exemplars are used.

Figure 2 indicates the extent to which a person has a preference for a specific mode of thinking. It is indicated by separate quadrants, identified by means of symbols A, B, C and D as mentioned earlier on. The extent to which a person has preference for a particular mode of thinking is shown in the circles within circles. The closer the end-points are to the perimeter, the greater the preference and *vice versa*.

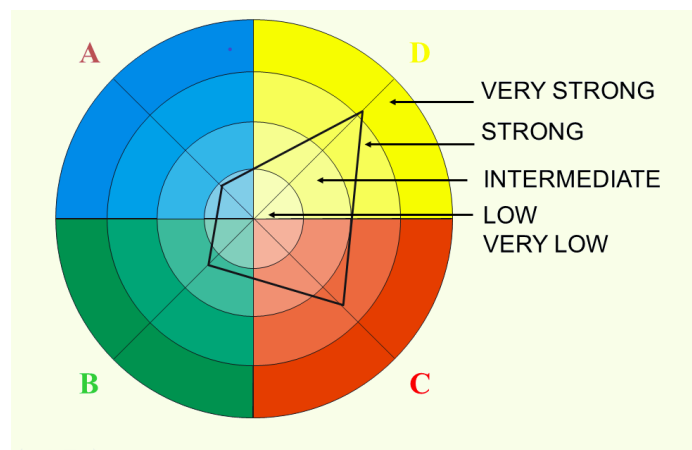


Figure 2 – Determining thinking preferences

Source: Du Toit, 2019.

When an individual has a very strong or strong preference for a specific quadrant – as primary choice – it is indicated in the two circles closest to the perimeter. The choice of intermediate is indicated in the second inner circle. The choice of low or very low falls in the inner circle, closest to the centre – tertiary choice. A primary choice is indicated by 1; an intermediate choice by 2 and a low or very low (tertiary) choice by 3. Using these numbers in sequence, for example 3>2>1>1, indicates a preference code. This example indicates that the individual with this profile has a tertiary preference for quadrant A, indicated by 3; a secondary choice for quadrant B (2); a high preference for quadrant C (1) and the highest for D (1). Such a profile, with two first choices (primary) is referred to as being double dominant.

Different types of profile are distinguished based on preference codes. The most common are double dominant profiles. Double dominancy lies in the fact that two quadrants are most preferred, opposed to other quadrants that may be secondary or tertiary choices. It may be the case that three quadrants are chosen as most preferred. In this case the profile is triple dominant. Quadruple profiles, where all quadrants are chosen as most preferred, are rare.

One's profile forms a significant ingredient of one's lecturer identity. Profiles are indicated by means of a visual representation similar to the hypothetical one below. The solid line indicates

preferences for the respective quadrants. The dotted line is an indication of one's stress profile – indicating possible shifts when one is under pressure.

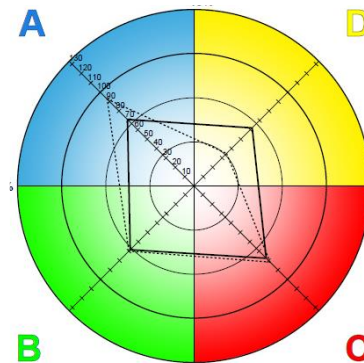


Figure 3 – Hypothetical brain profile

Source: Du Toit, 2019.

The following is a hypothetical narrative of the profile depicted in Figure 3. The preference code for this profile is 1>1>1>2. This is indicative of a triple dominant profile. The thinking style quadrant most preferred is the C quadrant. The person selected *intuitive* as descriptor of him/her. This descriptor represents a general overview of the individual's mental preferences in day-to-day life. Work elements the person strongly relates to include *teaching*, *writing*, *expressing* and *interpersonal*. These elements reflect the person's mental preferences at work.

The next most preferred quadrant is A. The person selected *analytical* and *factual* as descriptors; and *critical* as the key descriptor – the one most descriptive of the person. Work elements the person identified as ones he/she do well include *analytical* and *problem solving*.

The next most preferred is the B quadrant. *Sequential*, *conservative* and *detailed* were descriptors selected. The person's least preferred quadrant is D. *Holistic* and *intuitive* were selected as characteristics of this individual. The distribution of the quadrants is C>A>B>D.

The dotted line tells something about how the person most probably would react under pressure. This stress profile indicates that the distribution of the quadrants changes to A>B>C>D.

This suggests that there may be some shifts in this mode of thinking when under pressure, perhaps with a less-preferred quadrant becoming more dominant or a generally preferred one receding into the background.

As our thinking preferences inform our lecturer identity, so would any lecturer's professional identity be informed by their choices relating to modes of thinking. Each lecturer will have as data set a thinking preference profile. This will inform all actions he/she will be involved in.

Approaches to research, teaching practice and looking into the self will differ from lecturer to lecturer. And as a community of practice we will have as a data set a composite group profile that will show how we complement one another's preferences for modes of thinking and where we have to put in some effort to fill gaps that might exist.

Members of the scholarly community of practice will use this position paper as a theoretical grounding of their research and publications.

CONCLUSION

Establishing a scholarly community of practice within a higher education context offers the early-career academics in health sciences, who are members of the team, the opportunity to develop a distinct lecturer identity. Since a scholarship of teaching and learning is integral to our professional identity, studying relevant literature that focuses on innovative ideas that can enhance teaching and learning is inevitable. Based on our study of the literature we could create a construct frame that informs our research. As the theory on Whole Brain® thinking is the epicentre of our research, all aspects of our professional identity are informed by the notion of us having distinct preferences for modes of thinking. Insight into our respective thinking preferences will enrich our personal and professional development as lecturers, our teaching practice and our research.

Other learning theories that we have studied are inevitably linked to one another as we have a holistic view of what professionalism in higher education entails. With the theory of Whole Brain® thinking being the epicentre, other theories are enriched in such a way that new meaning is constructed with regard to what the theories hold for us as individuals, our lecturer identity formation and teaching practice. We use the principles of Whole Brain® self-regulated professional learning, Whole Brain® constructivism, maximising own potential in a Whole Brain® fashion, etcetera.

The research design that fits processes relating to professional development and lecturer identity formation best is action research or participatory action research. As action research and participatory action research are scholarly means of monitoring our professional growth as individuals and as a group, it in essence serves as professional learning theories. As proposed, we opt to work with Whole Brain® action research and Whole Brain® participatory action research. We consider the ethnographic and auto-ethnographic approaches to self-enquiry as being Whole Brain®. We use principles of multiple intelligence and Whole Brain® thinking as pointers. Our action research is Whole Brain® as it focuses on the self (C quadrant), it is experimental (quadrant D), it is a planned endeavour (B quadrant) and it generates new meaning/facts – of self and practice (quadrant A). Although we acknowledge that no intelligence can be activated in isolation, intrapersonal intelligence is identified as being dominant. Our participatory action research is Whole Brain® as it is focused on the scholarly

community of practice – the collective us. Interpersonal intelligence is identified as being dominant in this regard.

We use Whole Brain® thinking as a lens that gives us a sense of the bigger picture of our individual selves, our world view, our teaching practice, research and community engagement, and of our scholarly community of practice as well as of our lecturer-identity formation.

Whole Brain® thinking brings an additional dimension to the self, practice, other theories and our research. Further reading is part of any scholarly endeavour. What we have found thus far is that caveats in the literature do exist as far as studies on Whole Brain® action research are concerned. No studies on Whole Brain® lecturer identity formation exist. This affords us the opportunity to construct new meaning of lecturer identity formation and action research and participatory action research – to contribute to scholarship advancement of the professional development of early-career academics in health sciences as scholarly niche. This is what we are aiming at as a scholarly community of practice.

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