Teacher decision-making in the classroom: The influence of cognitive load and teacher affect

Abstract

In everyday classroom situations, teacher decisions are influenced by cognitive load and affect. Cognitive demands related to decision-making by teachers, and associated affect, influence future decisions, providing a possible juncture to change future outcomes. Eight Australian Secondary teachers were selected for this qualitative study based on the variance in years of experience, gender, age and expertise across content areas. Interviews, classroom observations and reflection sessions revealed participants differed in the language they used when describing their process in making classroom decisions. Assertions from teachers, along with classroom observation data, showed an increased use in proactive teacher actions and reduced cognitive load in decision-making when decisions were made in a state of positive affect. The language from interview transcripts of words such as achievement, satisfaction and success demonstrated this change towards positive words and actions used by teachers to describe their teaching experiences. Furthermore, teachers reported reduced negative affect concerning their teaching competence, student behaviours and their classroom environments, when their initial response to unproductive student behaviour was to refer to their classroom expectations and/or acknowledge correct student behaviours, before addressing unproductive behaviours. Teacher reflections on the use of positive actions in classroom practices were consistent with reported reduced cognitive load and feelings of success. All teachers reported increased self-reflection while teaching due to increased awareness of choices when making decisions. Reduced cognitive load, increased positive affect and improved consciousness of choices before teachers made classroom decisions improved positive classroom environments.

Keywords: affect, classroom observations, cognitive load, decision-making, teacher reflection

Introduction

The act of decision-making in a classroom is situated within the context of highly social environments, founded in constant and complex human interactions. Decision-making is defined as the process of identifying a problem, gathering information and assessing alternative resolutions (Beach & Lipshitz, 2017). The process and outcome of decisions made in a classroom are important, considering teachers are estimated to make a new decision every 15 seconds (Wittrock & Association, 1986). Decision-making then requires different levels of cognition dependent on the complexity of the problem identified and the experience in assessing and responding to that problem previously.

Previously conceived as *mental load* (Moray, 1979), cognitive load was of interest throughout the research with a clear development leading to Cognitive theory, a theory for describing cognition in learning (Chandler & Sweller, 1991; Martin, 2012; Mayer, 2001; Niegemann, 2001). Cognitive load is summarised as the volume of mental activities imposed on ones working memory (Sweller, 2017), concerned with the immediate conscious linguistic and perceptual processing of information. While Cognitive load theory has provided a significant degree of research into the application of cognitive load to the learning and instructional design of material application of this research to the process of decision-making and the influence cognitive load has on these decisions within teaching practices was less accessible. The literature on decision-making demonstrated that cognitive load, along with affect have potential influences on the choices observed when making a decision (Blanchette & Richards, 2010).

Affect in decision-making refers to the underlying affective experience of feeling, emotion or mood and therefore is relevant to the study of decision-making in teaching practices (Francis & Love, 2020). Moods are generalised as emotional feelings, lasting for extended periods, a bad or a good mood. In contrast, emotions are immediate and responsive

feelings in relation to a specific set of stimuli. Kant (2017), described a feeling as a state in which someone is conscious of that state, their perception. However, a feeling cannot be incorporated in a cognition: it 'is merely subjective, whereas all other sensations can be used for cognition' (Kant, 1999, p. 29). What this suggests is that feelings and emotions that influence the affect someone has regarding an instance or a memory will inevitably influence cognition through affect rather than the feeling itself. The affect of a situation is the physical sensations you have when you have these emotions and is the focus of this study. Affect is what we notice about our feelings and emotions. It is also the thing that is most likely to associate an interaction with a sentiment of frustration or anger, happiness or distress. This attachment to a feeling, or the affect, will influence the future decision-making process in similar and new situations (Ashkanasy, Humphrey, & Huy, 2017).

Importantly, as each teacher lives his or her reality, the influence of affect will vary for different teachers in diverse classroom environments that will impact on the decisions they make and their subsequent responsive actions. What was found across the literature was that the measurement of cognitive load is relative and transient, with subjectivity influenced by individual and empirical factors that may vary over time (Orru & Longo, 2018). In a review of the literature, Martin (2014)concluded that "cognitive load cannot be seen as a constant factor related only to objective features of instructional format or content" (p. 24).

Classroom environments are an important consideration in student learning and outcomes, comprised of interfaces having to do with attitudes, motivation and levels of anxiety that are influenced by acculturation and personality variables (Memari & Gholamshahi, 2018). The research reflected that students learn better when they view the learning environment as positive and supportive (Sandilos, Rimm-Kaufman, & Cohen, 2017). Such representation of teaching, implies affect influences teacher effectiveness and the creation of positive classroom environments for learning (Jhang, 2020).

Considerations of how affect influences teachers' decision-making become important when contemplating the statement made by Hattie (2003) that individual teachers make the difference. While it is evident that different teachers gain different results due to the way they teach and manage their classrooms, little evidence was found about how that difference is achieved. This study explores Hattie's statement to seek out a greater understanding of how the teacher makes the difference concerning the decisions he or she makes and what influences this decision-making.

The intersection on cognition, affect and decision-making in the literature identified two potential limitations in previous research to be addressed in the current study. In consideration of decision-making in classroom contexts, the literature is not conclusive in findings because of the nature of past research itself (Betsch, Plessner, Schwieren, & Gütig, 2001) and the organisational contexts of the research (Murray, Jaramillo, & Wang, 2017). What this means is that the literature revealed that the majority of previous research involved college students in laboratory experiments and that these students responded to hypothetical scenarios (Betsch et al., 2001). Studies that isolated specific factors and lacked the realism of actual teacher participants in the context of teaching itself. The studies found across the literature lacked the degree of complexity reflected in the reality of teacher decision-making within classroom environments.

Theoretical background

Historically, decision-making research focussed on the choices made in dichotomous areas of probability, politics and mathematics (Buchanan & O Connell, 2006). Such theories are situated in linear understandings of decision-making focused on outcomes and predictions for future events (Fisher, 1962; Rezaei, 2016). Linear decision-making is positioned in cues from the world that the decision-maker weighs and then uses in their execution for future events (Srinivasan, 2020). It uses previous situations to inform current and future decisions,

meaning that some options may be eliminated quickly if they have no prior experiences attached to them. While this practice may reflect quick execution in choosing the final option, this process focusses on the prediction of future similar or dissimilar outcomes (Binder, Johansen, & Imsland, 2019).

Linear, or rational theories, potentially limit the development of understanding and the influences on the process of decision-making due to their focus on the outcome for future predictions. In contrast, it is the process rather than the outcome of the decision-making, which is of interest to this study. In all situations of decision-making, the decision-maker, faced with a problem, considers the choices and then the execution of the decision falls into one of two broad categories as shown in Figure 1: (1) rational decision-making; or (2) intuitive decision-making. These two broad categories represent a division of theorists perspectives based on the outcome of the decision-making process and reflect the way choices are viewed, analysed and acted upon (Irwin & Real, 2014).

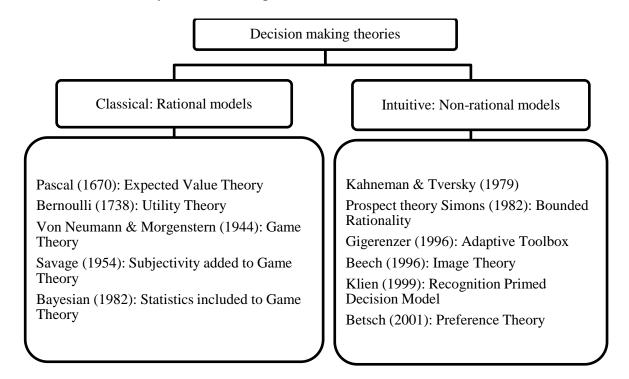


Figure 1. Decision-making theories

The two theoretical paradigms present varied perspectives in understanding decision-making and the ways to establish and predict future outcomes. For interventions to be successful, the process would be the point in time that changes in the way choices are viewed, or first decision are made could potentially change the outcome. The following subsections provide a review of the literature, in the field of decision-making. Affect, cognitive load and decision making will be reviewed in their subsection with the final review of the literature providing evidence on the relationship amongst the three elements. The paper will then outline the methodology used in the study, provide the findings and discussion on the data and lead the reader to the conclusions drawn from the study in the final section.

Decision-making

Research by Iyengar, Wells, and Schwartz (2006) found that college graduates who described themselves as rational, or linear, thinkers secured jobs with 20% higher starting salaries but reported less satisfaction with the choice made both during and after the job search. Applied to teacher practice, this would suggest that teachers who follow rational decision-making processes do so at the expense of consideration of context and all available alternatives. After the decision is made, linear or rational decision-making processes could leave teachers with a lowered sense of satisfaction in the outcome. Rational decision-making is based on consideration of as many available options as can be found, increasing teacher cognitive load in situations that may already have added anxiety. Dar-Nimrod, Rawn, Lehman, and Schwartz (2009) acknowledged that it is the availability of too many options that leads to cognitive overload and a negative sense of affect.

The theories developed in recent times have extended beyond the linear models to include concepts of environment, experiences, emotion and routines that influence the decision-

making process. This change in the focus from the outcome alone to the potential influences on the decision-making process includes the concepts of affect and routines (Betsch, 2014). As decision-making is the identification of a problem (or task) and finding the solution through analysis of multiple available choices, the final decision can be represented as a combination of elements in the decision-making process as represented in Figure 2.

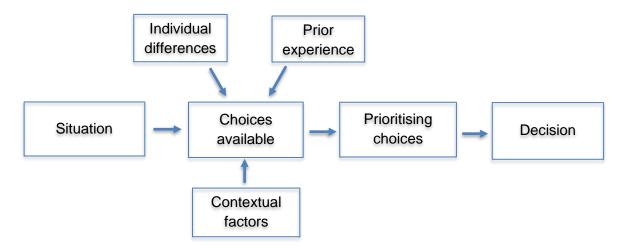


Figure 2 Decision-making model (Adapted from Zeni, Buckley, Mumford & Griffith, 2016)

Andrade and Ariely (2009) demonstrated that feelings, and the affect associated with a decision, influence future decisions of similar events. What this means for teachers in classrooms is that repeated instances of unproductive student behaviours will influence the choices a teacher makes when deciding an outcome based on previous experiences.

Supporting the concept that the affect related to previous experiences outlives the original cause for a students' behaviour in a current situation. The benefit of understanding these elements in the decision-making process are found in the preparation and education of teachers in how decision-making can change the classroom environment based on the way they see and respond to a situation, time and time again. It is the process of the decision-making that is of interest to this study.

Cognitive load and affect – influence on decision-making

Cognitive load and affect have the potential to influence the decision-making of any person based on their prior experiences and the context in which the decision is being made. Cognitive load refers to the used amount of working memory resources while affect refers to the underlying affective experience of feeling, emotion or mood to a situation or event. During the decision-making process, the working memory is vulnerable to overload, reducing the space available for other cognitive tasks. This can then flow through to a person's affective state as they seem frustrated or flustered at not being able to execute even simple decisions with speed or reaching a preferred outcome (Tyng, Amin, Saad, & Malik, 2017). Furthermore, negative affect influences working memory as the more anxious, frustrated and tense a person, the more difficult the ability to seek all alternatives when making a decision (Carswell, Fabre, Howard, & Williams, 2017). Situations with opportunities for similar decision-making processes can result in considering choices differently that leads to vastly altered outcomes based on the individual executing the decision.

Understanding the development of teacher affect will assist in teacher change, highlighting the importance that previous experiences have on cognitive load and affect in future decision-making. The influence of cognitive load and affect would change in different situations depending on the choices available and the approaches of the decision-maker to assess the choices. To better prepare teachers for reaching preferred outcomes when executing a decision, if the relationship between decision-making, cognitive load, and affect can be better understood then the process could change the outcome.

Relationship of decision-making, cognitive load and affect

The relationship between teacher decision-making, cognitive load and affect shifts contingent on the choices available and the approaches used by an individual to assess the

choices available to make the decision (George & Dane, 2016). The approach taken by a teacher to make a decision is the process, and any process considers the methods, or the approach used to do something (Arias-Bolzmann, Agurto, Chavez, Pantoja, & Pinto, 2018). The process used by teachers in decision-making can be seen to include the concepts of teacher thinking (cognitive load), choices available and the context of the current situation.

A situation is defined as any interaction that disrupts the learning and requires teacher intervention. The choices available, when responding to a situation, are influenced by: individual differences; prior experiences; and the contextual framework in which the situation occurs. The term cognitive load emerged from cognitive load theory in the 1980s to describe the available working memory that is located in the part of the brain that manipulates information the moment it is received (Murray et al., 2017).

What was not found in the literature was evidence on how cognitive load and affect influence a teacher in making daily decisions in their classroom practices and the influence they have on the process of the decision-maker rather than a focus on the outcome. When the process is understood, teacher education and development can be shaped to better equip teachers in the decision-making process of rather than targeting prediction of teacher decisions after they have been made. This concise review of the literature on decision-making recognised the area in which further research is required to better understand the influences on teacher decision-making. The next section will provide the methodology used to investigate the gap in the literature with the findings and discussion section, providing detailed evidence to support further investigation. The conclusion presents the position of the paper and direction for future research.

Methodology

This qualitative research (Creswell, 2014) was conducted in the natural setting of the classroom (Lloyd, Weaver, & Staubitz, 2016) based on philosophical assumptions of social

constructivism. Social constructivism recognises that people learn and build new understandings as they engage in learning experiences (Diaz-Leon, 2015). Using qualitative methods allows the research to measure things that cannot be numbered adequately, such as how a person feels when an event happens. Interpretivism is one form of qualitative methodology that relies upon both the trained researcher and the human subject as the instruments to measure some phenomena, providing data in real settings with the people of which the research is about. Understanding teacher decision-making was best situated through the assumptions reflected in social constructivism and interpretivism represented in research through the inclusion of interviews and observations (Brinkmann & Kvale, 2015). Interviews provided the foundation to explore the participants own views, and interpretations of events and the observations provide the evidence to compare between the two.

After ethics approval, eight teachers were recruited using convenience sampling (Etikan, Musa, & Alkassim, 2016) from two demographically similar yet geographically distanced state high schools in Australia. The logic of convenience sampling lies in selecting information-rich cases, with the "objective of yielding insight and understanding of the phenomenon under investigation" (Bloomberg & Volpe, 2018, p. 148). The teachers represented a range of age, gender and content areas across both schools, as shown in Table 1, using pseudonyms to ensure participant anonymity.

Table 1. Research participants

Teacher	Content Areas	Teaching Experience	Category of Experience	
Pseudonym			School 1 or 2	
Leila	Arts	2	Beginning teacher School 1	
Brett	Humanities	27	Experienced teacher School 1	
Mandy	English	3	Beginning teacher School 2	
Rob	English	12	Experienced teacher School 2	
Indra	Science	2	Beginning teacher School 1	
Nick	Arts	12	Experienced teacher School 1	
Greta	Humanities	1	Beginning teacher School 2	
Pam	English	27	Experienced teacher School 2	

Over a three-month period, two classroom observations and interviews were conducted to explore the reflective practices of the participants. Reflective practice is the action of teachers learning through and from their own experiences towards gaining new insights of self and practice (Farrell & Ives, 2015). Reflection is a systematic reviewing process for all teachers linking affect and knowledge from one experience to be applied to the next. Through social constructivism, the study aims to understand teacher decisions as they occur in the classroom itself, allowing the study of reality as it is. Social constructivism holds that reality is constructed through the language in interactions with others primarily influenced by history, society, and culture (Armstrong, 2019). Social constructivist theories provide a theoretical basis for understanding individual realities and views of the world through a combination of interactions and the meanings that individuals attribute to such interactions (MacBlain, 2018). To achieve these aims, the interviews for this study were guided by the research question: What elements influence teacher decision-making in the classroom?

This study considered the influence cognitive load and affect had on teacher decision-making. Participants were deliberately selected from two regional schools in Queensland through purposive sampling (Tracy, 2019) based on the location of the researcher and the schools having similar demographics. Both schools have similar Index of Community Socio-Educational Advantage (ICSEA) rankings. These schools were intentionally selected as they represented a demographic of increased suspension rates compared with other schools, with the association of student disruption to teacher stress is identified throughout the literature and therefore pertinent to this study.

The responses made by participants were transcribed and then coded using NVivo software to interpret the data through language choices of positive and negative affect. The discourse of the transcriptions in NVivo was available for discourse analysis to explore how knowledge, meaning, identities, and social goods are negotiated and constructed through

language-in-use. The objective of an interview for discourse analysis is to capture the participant's language (Starks & Brown Trinidad, 2007, p. 1374).

To better understand the use of language by teachers describing their experiences in this research, keywords in context (KWIC) was used as the framework of analysis to determine language patterns (Luhn, 1960). Words used by teachers to describe teaching actions were divided into two initial themes of *acknowledgement* and *correction*. Based on keywords used by participants to describe their role in establishing positive classroom environments.

Acknowledgment language described actions that acknowledged students doing what was expected, while correction language acknowledged students in unproductive behaviours who were not meeting expectations. Upon further analysis, the categories of *positive affect* and *negative affect* were included as they emerged within these themes of the language used.

When a teacher utilised corrective actions, the narrative in interviews of behaviour dominated in response to unproductive learning behaviours. At the other end of the continuum are teacher actions representing *acknowledgement* with *positive affect*.

Findings and Discussion

The language recorded through teacher interviews represented how a teacher felt about their actions, as their actions are their responses to the choices in making the decisions (Arias-Bolzmann et al., 2018). The themes of teacher language used were represented as KWIC and are identified by finding the point of intersection of the corresponding columns and rows. For example, the words used most regularly by teachers in the areas of Classroom Expectations and Acknowledge with Positive Affect were: teacher, expectations, proactive and learning. Nick stated that 'clear expectations', while Pam commented on the 'positive nature of proactive comments in my classroom rules'. In contrast, teachers who acknowledged with negative affect used words such as Brett and Mandy, who referred to

'students' as the ones who created the classroom environment. Indra reported that her 'presence seemed to make little difference' as 'students will continue to do as they like', no one is listening (to describe student disrespect), constantly reminding students and Rob and Leila reported feelings of 'tired' to express their feelings in managing classroom behaviour (change fatigue). This language usage shows the difference that was evidenced between similar actions based on a teachers' state of affect. The language the teacher participants used to retell an event reflected the affect they associated with that event as presented in Table 2. In analysing the themes, the teacher narratives provided contextual grounding for the analytical discussion about decision-making in the classroom.

Table 2. Teachers literal words used to describe their actions

Themes	Acknowledge and positive affect	Correct and positive affect	Acknowledge and negative affect	Correct and negative affect
Classroom expectations	Teacher Expectations Proactive Learning Consistent Positive	Doing what is asked Increase in students working	Student in control Frequently reminding Rules are broken	Reactive Students non- responsive Tired
Acknowledge students meeting expectations	Positivity Relationships Teaching Learning	Building relationships Changing society	No one getting praised Disrupted	Doing as we were told the first time
Correction when not meeting expectations	Curriculum refocus Work focus In control	Curriculum refocusing Learning Selectively attending	Teacher loses face Disrespect Stop others learning Inconsistency	Managing Punishing Interruptions No learning
Follow Through for unproductive behaviours	Rewarding Praising Building relationships Controlling Positive talking	Reducing the need Positive relationships Change Learning	Not rewarding negative behaviours Repeated events	Blame students External faults Negative relationships

There was a shift in the language style and the keywords used by participants to describe their actions in this study. Anthropologists have drawn attention to the interpretation of events via a representation of experiences through narratives (White, 2017). The language change was consistent across different classroom events related to the same students and their retold perceptions of the student and prior events. In instances of negative affect, language moved to a passive or blame oriented nature (Ostovar-Nameghi & Sheikhahmadi, 2016). The inclusion of language in interpreting how an event was perceived assisted this study in understanding the process of how teachers make decisions and the cognitive load that such decision-making requires.

The second interview conducted after the two classroom observations, showed an improved state of awareness in all teachers with increased speed in prioritising choices when processing and executing a decision. Alongside this increased efficiency in making decisions, teachers were happier with lowered feelings of frustration and a sense of less reactivity in the outcome. Ellis (2016) documented the impact a metalanguage has on classroom communication, a common understanding in language use will develop communicative processes. Clear communicative processes support positive affect and can be found in language patterns used to describe experiences (Abd Elhay & Hershkovitz, 2019). The language choices made by teachers, over the period of the two interviews, confirmed a shift in their views about how they reacted to classroom instances and the affect behind such decisions. All participants stated they had an improved openness to being observed as they saw it as a means to change their practice for the better of their students and self. In the beginning, six of the eight participants reported negative affect found related to feelings of nervousness, anxiety and connected these feelings to a sense of judgment found from negative experiences of previous observations or episodes of feedback. Such reflection in the second interview demonstrated adaptability and willingness to apply new strategies in their

teaching as trust increased between observer and participant. Developing trust with teacher participants was an essential part of the study to establish the influence of affect in regular teaching practices.

Teacher affect can be evidenced by the change in the frequency of words used in teacher language patterns across the length of the study (George & Dane, 2016). Greta, Brett and Nick, in their first interviews, stated that they felt "ill-prepared" to manage classroom behaviours and that this caused Leila "anxiety to make the right decision." Throughout the interviews, there were many instances of blame toward external entities and excuses for when the teachers felt unsure or when they felt their choices were indecisive in classroom management. Such statements of blame were found in examples of transcripts of Brett who stated that "University is a complete waste of time for learning classroom skills" and Leila that "every single class is a struggle, and they [students] do not take anything on board." Consistently the first interview transcripts included references to feelings of frustration, with feelings expanding to how teachers saw other teachers as well as their practice. For example, when talking about how other teachers were inconsistent in their classroom management, Nick said that "it did not matter how many people told her, nothing changed." This frustration, or negative affect towards other staff members, was also represented in the comment by Greta regarding demands on teachers, "there are just too many things we are doing, I am confused."

In comparison, after the second observation and interview, teacher participants demonstrated a shift in the language used to describe classrooms and colleagues whereby participants reported an increased sense of control and positive affect reflected in Leila's transcript, "that reflective part of it is so important, and that is what we see in the classroom now." Brett's comments also supported evidence in this positive language shift after observations reflecting that "there are always things you can be doing as a teacher" and

Greg, supporting this sentiment feeling that sense of achievement when he was able to demonstrate that he was responsible for the classroom, "I set the environment up, and it worked." Similarly, Pam found success and reported a feeling of happiness as she changed her focus in the classroom and found that "you have to be consistent, but it is also ok to be flexible."

In the second observation, all teachers took the evidence from the initial observation, and within six months had consistently shown change to their teaching practice. In all observations, teachers' correction and redirection actions decreased. Positive actions were less intrusive to the learning of other students due to a reduction in the public nature of their use. This was a new finding not witnessed across the previous literature on classroom management and teacher decision-making. Previous studies have almost exclusively focused on the disruptive nature of student behaviours (Nash, Schlösser, & Scarr, 2016) and teacher's management of those behaviours (Pas, Cash, O'Brennan, Debnam, & Bradshaw, 2015), not the intrusion of their teacher actions to the learning of other students.

From the interviews, another pattern emerged based on the focus of the reflection session. The reflection sessions were framed in a solution-focused conversation, with a lead into areas for possible change. A solution-focused conversation places the "focus" on what is happening that creates positive learning environments and discusses how to do more of it. When the focus of the conversation shifts away from what is broken, solutions from what is already working will be seen (Lopez, Pedrotti, & Snyder, 2018). From this perspective, the researcher found that what happened in the classroom when teachers have evidence on what is working, changed their beliefs through their reflective practice towards favouring that action in future decisions made. In the interviews, Nick stated that he

built expectations ... became more consistent. Before [the observations] Nick stated he was ... flustered."

Such language used to describe feelings demonstrated affect in the areas of, frustration and failure (McGrath & Van Bergen, 2015). The above statement by Nick supports the research on the link between negative affect and increased chance of dissatisfaction in one's job, and teachers reported a sense of increased success when they focussed on what was working (Akkaya & Akyol, 2016). Nick reported after the observations that he felt "more confident" as did Greta, who changed her "mindset drastically in terms of managing the classroom and being prepared."

The difference between the participants' interviews showed shifts in thinking (cognition). Positive psychology (Duckworth, Quinn, & Seligman, 2009) formed the basis of the reflection session after each observation into the teaching of how to assess available choices in the classroom and to own the teacher narrative in conversations to find the good behaviour first. When the appropriate behaviour in the room is recognised first, it changed the culture within the classroom (Suissa, 2017). This change created a culture based on acknowledgement and teacher actions that promoted the expectations set in the classroom around curriculum and behaviour. The significance of these findings is imperative in consideration to the design and delivery of teacher education programs in the areas of preservice as well as those in teaching practice. To do the work of teaching with reduced negative affect and increased positive environments would potentially reduce teacher attrition due to reasons cite of student behaviour and issues with classroom management.

Implications, limitations and future directions

This study provided evidence to support that teachers could change long-formed habits used to make daily decisions through a reflective framework based on classroom observations. Suitably qualified and competent teachers are drivers of good quality education systems, and sustaining such quality requires high expectations of interventions that focus on

how to improve teacher practices (Mafora, 2013). The discussion of this study demonstrated that the participants' language changed throughout the two observations and showed that the teacher participants' reflections on their practice increased after the classroom observations. Through a more targeted focus on positive actions in the classrooms, teachers increased their willingness to try new strategies. Through focusing on what is working, teachers consistently reported reduced cognitive load in the classroom. This simple shift in how to approach the consideration of choices available provides significant suggestions for future training programs of both beginning and established teachers.

Several implications for practice are identified in this study. Firstly, school Principals should note that all teachers, including experienced teachers, benefited from interventions involving classroom observations that related to decision-making. A review in policy and school-based expectations taking this into consideration will better meet the needs of all teachers on decision-making in a changing educational system. Secondly, the simple shift in focus in decision-making from redirection to reinforcement will change the classroom environment. Finally, that when teachers shifted their focus in choosing alternatives based in areas of classroom expectations and reinforcement of appropriate student behaviours first, their cognitive load was decreased as was episodes of negative affect in themselves.

Several limitations require consideration when interpreting the results of this study. One is the small number of participants in the sample group. Future research could take this into account and increase the sample size. Within these schools, the researcher who undertook this study held a position of influence as an administrator in the Department of Education. This possible position of power was managed through the anonymity and confidential nature of data collection and handling to ensure no identification of teachers. Future research would benefit the analysis of teacher decision-making and the benefits of positive affect and reduced cognitive load.

Conclusion

Positive teachers add to a positive teaching culture and improve outcomes for student learning. Teacher positive affect is at risk when decision-making demands a high cognitive load over extended periods. The research demonstrated a clear change in teacher affect when the choices available to make a decision were thought of differently through the lens of acknowledging students who are doing the right thing. The simplicity of the program demonstrated continued success in classroom practices by reducing the number of choices considered by teachers when faced making decisions.

What the teachers focused on in the classroom added to the way the teachers' decisions were made and the actions they put in place led to positive classroom environments. This change in the first response to acknowledgment over-correction in interactions around curriculum and behaviour expectations were notable. The application of these findings to future professional learning programs will potentially provide a review and redesign of how a simple shift in teachers decision-making results in successful teaching practices. The outcome being a reduction in cognitive load and increased positive affect, leading to teacher retention through more relevant professional learning programs.

References

- Abd Elhay, A., & Hershkovitz, A. (2019). Teachers' perceptions of out-of-class communication, teacher-student relationship, and classroom environment. *Education and Information Technologies*, 24(1), 385-406. doi:10.1007/s10639-018-9782-7
- Akkaya, R., & Akyol, B. (2016). The relationship between teachers' locus of control and job satisfaction: A mixed method study. *International Online Journal of Educational Sciences*, 8(3), 71-82. doi:10.15345/iojes.2016.03.008
- Andrade, E. B., & Ariely, D. (2009). The enduring impact of transient emotions on decision making. *Organizational Behavior and Human Decision Processes*, 109(1), 1-8. doi:10.1016/j.obhdp.2009.02.003
- Arias-Bolzmann, L., Agurto, W. F., Chavez, A. M., Pantoja, R., & Pinto, A. (2018). Decisions in hierarchical production planning: goals, heuristics and bias. *Revista Espacios*, 39(14), 1-11.

- Armstrong, F. (2019). Social Constructivism and Action Research: Transforming teaching and learning through collaborative practice. In *Action Research for Inclusive Education* (pp. 5-16). London, UK: Routledge.
- Ashkanasy, N. M., Humphrey, R. H., & Huy, Q. N. (2017). Integrating emotions and affect in theories of management. *Academy of Management Review*, 42(2), 175-189. doi:10.5465/amr.2016.0474
- Beach, L. R., & Lipshitz, R. (2017). Why classical decision theory is an inappropriate standard for evaluating and aiding most human decision making. *Decision Making in Aviation*, 85, 835-847. doi:10-13T14:06:45.000+0200
- Betsch, T. (2014). *The Routines of Decision Making*. Boston, Massachusetts: Psychology Press.
- Betsch, T., Plessner, H., Schwieren, C., & Gütig, R. (2001). I like it but I don't know why: A value-account approach to implicit attitude formation. *Personality and Social Psychology Bulletin*, 27(2), 242-253. doi:10.1177/0146167201272009
- Binder, B. J. T., Johansen, T. A., & Imsland, L. (2019). Improved predictions from measured disturbances in linear model predictive control. *Journal of Process Control*, 75, 86-106. doi:10.1016/j.jprocont.2019.01.007
- Blanchette, I., & Richards, A. (2010). The influence of affect on higher level cognition: A review of research on interpretation, judgement, decision making and reasoning. *Cognition and Emotion*, 24(4), 561-595. doi:10.1080/02699930903132496
- Bloomberg, L. D., & Volpe, M. (2018). *Completing your qualitative dissertation: A road map from beginning to end.* Thousand Oaks, CA: Sage Publications.
- Brinkmann, S., & Kvale, S. (2015). *Interviews: Learning the craft of qualitative research interviewing* (Vol. 3). Thousand Oaks, CA: Sage Publications.
- Buchanan, L., & O Connell, A. (2006). A brief history of decision making. *Harvard Business Review*, 84(1), 1-16.
- Carswell, M. A., Fabre, G., Howard, S.-J., & Williams, J. (2017). *Think, Collaborate, Decide, Teach: A Guide for Success*. Nova Southeastern University. Fort Lauderdale, Fl.
- Creswell, J. W. (2014). *Research design: Qualitative, quantitative and mixed methods approaches* (4th ed.). Thousand Oaks, CA: Sage Publications.
- Dar-Nimrod, I., Rawn, C. D., Lehman, D. R., & Schwartz, B. (2009). The maximization paradox: The costs of seeking alternatives. *Personality and Individual Differences*, 46(5-6), 631-635. doi:10.1016/j.paid.2009.01.007
- Diaz-Leon, E. (2015). What is social construction? *European Journal of Philosophy*, 23(4), 1137-1152. doi:10.1111/ejop.12033.
- Duckworth, A. L., Quinn, P. D., & Seligman, M. E. (2009). Positive predictors of teacher effectiveness. *The Journal of Positive Psychology*, *4*(6), 540-547. doi:10.1080/17439760903157232
- Ellis, M. (2016). Metalanguage as a component of the communicative classroom. *Accents Asia*, 8(2), 143-153. doi:10.1080/09658410208667042
- Etikan, I., Musa, S. A., & Alkassim, R. S. (2016). Comparison of convenience sampling and purposive sampling. *American Journal of Theoretical and Applied Statistics*, *5*(1), 1-4. doi:10.6224/JN.61.3.105.
- Farrell, T. S., & Ives, J. (2015). Exploring teacher beliefs and classroom practices through reflective practice: A case study. *Language Teaching Research*, 19(5), 594-610. doi:10.1177/1362168814541722
- Fisher, W. D. (1962). Estimation in the linear decision model. *International Economic Review*, *3*(1), 1-29. doi:10.2307/2525296

- George, J. M., & Dane, E. (2016). Affect, emotion, and decision making. *Organizational Behavior and Human Decision Processes*, 136, 47-55. doi:10.1146/annurev-psych-010213-115043
- Hattie, J. (2003). Teachers make a difference: What is the research evidence? Paper presented at the Building Teacher Quality: What does the research tell us? Paper presented at the ACER Research Conference, Melbourne, Australia.
- Irwin, J. F., & Real, D. L. (2014). Unconscious influences on judicial decision-making: The illusion of objectivity. *Behavioral and Brain Sciences*, *37*, 1-19. doi:10.1017/S0140525X12003214
- Iyengar, S. S., Wells, R. E., & Schwartz, B. (2006). Doing better but feeling worse: Looking for the "best" job undermines satisfaction. *Psychological Science*, *17*(2), 143-150. doi:10.1111/j.1467-9280.2006.01677.x
- Jhang, F. H. (2020). Teachers' attitudes towards lesson study, perceived competence, and involvement in lesson study: evidence from junior high school teachers. *Professional Development in Education*, 46(1), 82-96. doi:10.1080/19415257.2019.1585383
- Kant, I. (1999). Practical philosophy. Cambridge, UK: Cambridge University Press.
- Kant, I. (2017). *Kant: The metaphysics of morals*. Cambridge, UK: Cambridge University Press.
- Lloyd, B. P., Weaver, E. S., & Staubitz, J. L. (2016). A review of functional analysis methods conducted in public school classroom settings. *Journal of Behavioral Education*, 25(3), 324-356. doi:10.1007/s10864-015-9243-y
- Lopez, S. J., Pedrotti, J. T., & Snyder, C. R. (2018). *Positive psychology: The scientific and practical explorations of human strengths* (3rd ed.). Thousand Oaks, CA: Sage Publications.
- Luhn, H. P. (1960). Key word-in-context index for technical literature (kwic index). *American Documentation*, 11(4), 288-295. doi:10.1002/asi.5090110403.
- MacBlain, S. (2018). Lev Vygotsky: Learning and social constructivism. In *Learning Theories for Early Years Practice* (Vol. 58, pp. 56-94). Thousand Oaks, CA: Sage Publications.
- Mafora, P. (2013). Managing teacher retention in a rural school district in South Africa. *The Australian Educational Researcher*, 40(2), 227-240. doi:10.1007/s13384-013-0088-x
- Martin, S. (2014). Measuring cognitive load and cognition: metrics for technology-enhanced learning. *Educational Research and Evaluation*, 20(7-8), 592-621.
- McGrath, K. F., & Van Bergen, P. (2015). Who, when, why and to what end? Students at risk of negative student—teacher relationships and their outcomes. *Educational Research Review*, 14, 1-17. doi:10.1016/j.edurev.2014.12.001
- Memari, M., & Gholamshahi, A. (2018). Attitudinal and Affective Classroom Ecology and Atmosphere. *Applied Linguistics Research Journal*, 4(2), 1-14. doi:10.14744/alrj.2020.92400ALR
- Moray, N. (1979). Models and measures of mental workload. In *Mental workload* (pp. 13-21). Boston, MA: Springer.
- Murray, J. D., Jaramillo, J., & Wang, X.-J. (2017). Working memory and decision-making in a frontoparietal circuit model. *Journal of Neuroscience*, *37*(50), 12167-12186. doi:10.1016/S0079-6123(05)49011-1
- Nash, P., Schlösser, A., & Scarr, T. (2016). Teachers' perceptions of disruptive behaviour in schools: a psychological perspective. *Emotional and Behavioural Difficulties*, 21(2), 167-180. doi:10.1080/13632752.2015.1054670
- Orru, G., & Longo, L. (2018). The evolution of cognitive load theory and the measurement of its intrinsic, extraneous and Germane loads: a review. Paper presented at the

- International Symposium on Human Mental Workload: Models and Applications, Sapienza, Rome.
- Ostovar-Nameghi, S. A., & Sheikhahmadi, M. (2016). From teacher isolation to teacher collaboration: Theoretical perspectives and empirical findings. *English Language Teaching*, 9(5), 197-205. doi:10.5539/elt.v9n5p197
- Pas, E. T., Cash, A. H., O'Brennan, L., Debnam, K. J., & Bradshaw, C. (2015). Profiles of classroom behavior in high schools: Associations with teacher behavior management strategies and classroom composition. *Journal of School Psychology*, *53*(2), 137-148. doi:10.1016/j.jsp.2014.12.005
- Rezaei, J. (2016). Best-worst multi-criteria decision-making method: Some properties and a linear model. *Omega*, *64*, 126-130. doi:10.1016/j.omega.2015.12.001
- Sandilos, L. E., Rimm-Kaufman, S. E., & Cohen, J. J. (2017). Warmth and demand: The relation between students' perceptions of the classroom environment and achievement growth. *Child Development*, 88(4), 1321-1337. doi:10.1111/cdev.12685
- Srinivasan, R. (2020). On solving fuzzy linear fractional programming in material aspects. *Materials Today: Proceedings, 21,* 155-157.
- Starks, H., & Brown Trinidad, S. (2007). Choose your method: A comparison of phenomenology, discourse analysis, and grounded theory. *Qualitative Health Research*, 17(10), 1372-1380. doi:10.1177/1049732307307031
- Suissa, J. (2017). Tough love and character education. Reflections on some contemporary notions of good parenting. *Pedagogical Culture*, *I*(1), 115-131.
- Tracy, S. J. (2019). Qualitative research methods: Collecting evidence, crafting analysis, communicating impact. West Sussex, UK: John Wiley & Sons.
- Tyng, C. M., Amin, H. U., Saad, M. N., & Malik, A. S. (2017). The influences of emotion on learning and memory. *Frontiers in Psychology*, 8, 1-22. doi:10.3389/fpsyg.2017.01454
- White, D. (2017). Affect: an introduction. *Cultural Anthropology*, *32*(2), 175-180. doi:10.14506/ca32.2.01
- Wittrock, M. C., & Association, A. E. R. (1986). *Handbook of research on teaching: A project of the American Educational Research Association*. New York, NY: Macmillan; Collier-Macmillan.