Exploring Kindergarten Children's Self-Regulation for Learning Within a Mindfulness-Based Social and Emotional Learning Program

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BACKGROUND AND RESEARCH QUESTIONS

Objectives

•Our study explored (a) how children's social and solo SR/L developed during the implementation of a mindfulness-based SEL program, (b) how children's demographic and teacher factors were associated with it, over the course of the program, and, (c) teachers' perceptions of changes in their teaching, classrooms, and/or students as a result of implementing the MindUP™ program.

•Data were from a larger pilot project examining a trauma informed framework and mindfulness-based SEL program (MindUP™) in a sample of at-risk kindergarten children.

Self-Regulation for Learning (SR/L)

•SR/L describes learners' engagement in metacognition, motivation, and strategic action to manage emotions, cognitions, and behaviours and achieve classroom goals (Hutchinson, 2013; Perry & Winne, 2013).

•Some research examines SR/L as a solo (i.e., children's individual willingness to persist when faced with challenge, reflect on behaviours, and employ strategies to achieve classroom goals) and social (children's use of metacognition, motivation and strategic action to engage with others to achieve collaborative and prosocial goals) process involved in children's adaptive and effective forms of academic learning (Hutchinson et al, 2015; Malmberg, Järvela, & Järvenoja, 2017; McCaslin, 2011).

•Research evidence has indicated that young children's SR/L is associated with developmental and educational advantages (e.g., improved academic performance, positive school self-concept, better teacher-student relationships; Perry et al., 2017; Hutchinson, 2013; McClelland et al., 2017; Moffit et al., 2011; Zimmerman, 1990). Our study examines how young children's solo and social SR/L in kindergarten is associated with teacher-level and child-level factors that may influence it.

Factors Associated With Children's SR/L

•Some research has indicated that student demographic variables (e.g., sex and age) are associated with young children's development of executive functions and SR/L in classrooms (Diamond & Lee, 2011; Hutchinson, 2013; Matthews et al., 2009).

•Also, researchers have begun to examine how classroom factors (e.g., types of classroom tasks) and teacher factors (e.g., teachers' self-efficacy) influence opportunities for young children's participation in SR/L (Collie, Shapka, & Perry, 2012; Rimm-Kaufman, 2009).

•Research indicates that teacher efficacy, decreased levels of teaching burnout, and their attributions of student behaviours (e.g., fixed versus growth orientations) may influence their willingness to support children's engagement in SR/L in classrooms (Collie, Shapka, & Perry, 2012; Deci et al., 1991; Dweck et al., 1978; Perry, Hutchinson & Thauberger, 2007; Serratore & Hutchinson, 2014; Upadyaya & Eccles, 2014; Woolfolk & Hoy, 1998). However, research is limited in that very few studies have examined how teacher and child factors influence, SR/L, and whether young children's development of SR/L occurs alongside the implementation of MindUP™ , a mindfulness-based SEL program.

Mindfulness-Based SEL Programs

•A growing body of research has indicated that the mindfulness-based SEL program, MindUP™, may enhance children's school adjustment, at least in the short-term (Carvalho et al., 2017; Schonert-Richl et al., 2015).

•In fact, mindfulness-based SEL interventions have been found to support children's development of executive functions, emotional-regulation, and positive attitudes towards school (e.g., academic self-concept; Schonert-Reichl, et al. 2015).

•However, the majority of research about MindUP™ has been conducted with children grades 3 to 5. To date, research has not investigated whether teacher-level factors that may influence the implementation of a mindfulness-based SEL intervention in classrooms, and how it may enhance children's SR/L. The present study addresses these issues.

METHODS

Participants

•Data were collected from 22 kindergarten teachers and ECEs (8 ECE; 0 males) and their students (*N* = 222; boys = 108; *Mean Age* = 4.57 years; Junior kindergarten = 109). Participating schools scored high on the Social Risk Index (Offord & Janus, 2007) calculated by the district (e.g., high rates of poverty, single parent families).

Measures

Self-Regulation in School Inventory

•A 9-item version of the SRISI (Hutchinson & Perry, 2012) was used to gather teacher-reports on children's behaviors associated with solo (6 items; α = .90, 95% CI = .88 - .92) and social (3 items; α = .90, 95% CI = .88 - .92) SR/L.

Maslach's Burnout Inventory

•Educators' burnout was measured using the MBI's (Maslach & Jackson, 1981) Personal Accomplishment (8 items; α = .73, 95% CI = .51-.87) and Emotional Exhaustion scales (9 items; α = .93, 95% CI = .87 -.97).

Attitudes Towards Trauma Informed Care's (ARTIC)

•Two of the ARTIC's (Baker, Brown, Wilcox, Overstreet, & Aurora, 2016) subscales were used to capture educators' self-efficacy (7 items; α = .79, 95% CI = .61 - .90) and behavior attributions (7 items; α = .76, 95% CI = .56 - .89).

Short Answer and Focus Group Questions

•Educators responded to two short answer questions on a survey or during a focus group which asked them whether they noticed changes in their classroom/students as a result of implementing the MindUP™ program. Questions included: (1) "Have you noticed any changes in your teaching as a result of implementing MindUP™", and (2) "Have you noticed any changes in your students/classroom as a result of implementing MindUP™".

Procedures

•In the Fall/Winter (2016/17), participating teachers and ECEs completed the pre-implementation (Time A) teacher and student measures, administered as online questionnaires, and provided demographic information on themselves and participating students.

•Educators implemented the mindfulness-based SEL program over 15 weeks (2016/2017) in their kindergarten classrooms.

•In the Spring (2017) educators provided the post-implementation (Time B) teacher and student measure. During this time, educators answered the two short answer questions or participated in the focus group.

RESULTS

Table 1

Descriptive Statistics for Social and Solo SR/L at Time A and Time B

Scale	Time A		Time B	
	M	*SD*	*M*	*SD*
Social SR/L	3.86	1.36	4.16	1.45
Solo SR/L	4.35	1.25	4.62	1.40

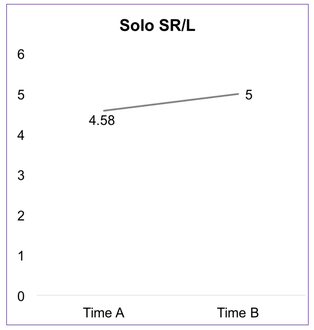

Figure 1. Changes in Solo SR/L From Time A to Time B

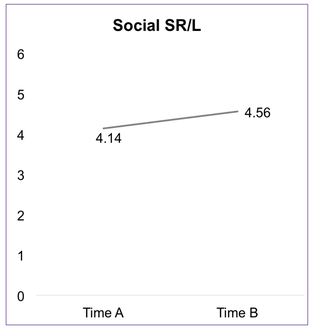

Figure 2. Changes in Social SR/L From Time A to Time B

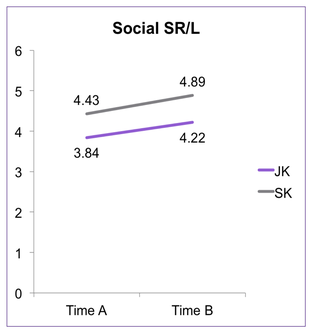

Figure 3. Effect by grade on Social SR/L over program implementation

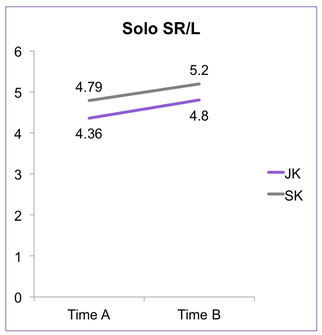

Figure 4. Effect by grade on Solo SR/L over program implementation

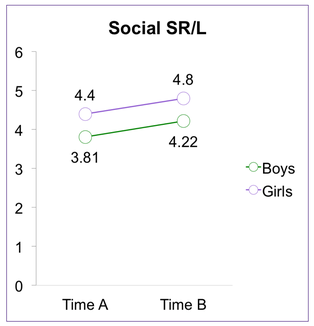

Figure 5. Effect of sex on Social SR/L

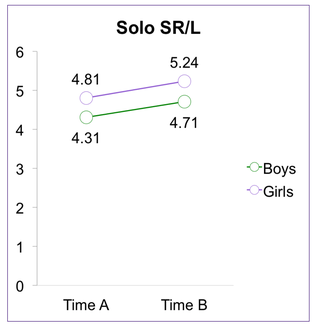

Figure 6. Effect of sex on Solo SR/L

Table 2

Unstandardized and Standardized Betas from the Regression Analyses Examining the Teacher Factors Predicting Children's Social and Solo SR/L at Time A and Time B.

	Model	Unstandardized B (Std. Error)	Standardized Beta	*p*- value
1	Social SR/L A	.11 (2.6)		
	Emotional Exhaustion A	.07 (.23)	.08	
	Personal Accomplishment A	.11 (.59)	.05	.04
	Self Efficacy A	.13 (.16)	.18	
	Underlying Causes A	.5 (.17)	.61**	
2	Solo SR/L A	1.57 (2.81)		
	Emotional Exhaustion A	.02 (.25)	.02	
	Personal Accomplishment A	.60 (.64)	.32	.60
	Self Efficacy A	-.03 (.18)	-.05	
	Underlying Causes A	.14 (.18)	.19	
3	Social SR/L B	-.009 (1.45)		
	Emotional Exhaustion B	.009 (.20)	.01	
	Personal Accomplishment B	.85 (.28)	.63**	.003
	Self Efficacy B	.01 (.22)	.01	
	Underlying Causes B	.19 (.13)	.28	
4	Solo SR/L B	4.31 (1.38)		
	Emotional Exhaustion B	.04 (.19)	.08	
	Personal Accomplishment B	.02 (.27)	.02	.97
	Self Efficacy B	.03 (.21)	.07	
	Underlying Causes B	.05 (.13)	.12	

Table 3

Coding Framework, Excerpts, and Themes extracted from the Teacher and ECE Qualitative Responses

Themes	Excerpts
Educators supporting SR/L	"We begin every day with a brain break of various kinds - we find it settles the class, calms them and they are more ready to learn"
Social –Regulation	"Children have become more aware the feelings of others around them."
	"Students support each other with calming strategies , i.e.: getting the glitter bottle, giving a breathing buddy, or using brain language in context - in the classroom and at school"
Solo–Regulation	"I have noticed some of the children using the breathing on their own when trying to self-regulate."
	"They can say, "No I can't sit today, I'm too fidgety," or whatever and they go to the table and stay there while we have a mind break and that's okay too."
General Outcomes	"The students are more self regulated overall"
	"The children are more creative in their play."
	"The children solve problems much more independently."

CONCLUSIONS

- Results corroborate previous research indicating that children's solo and social SR/L develops over time, and with experience (DiBacco, 2016; Malmberg et al., 2017 Perry et al., 2017; Perry & VanDeKamp, 2000); and are the first to provide evidence that children's SR/L develops along-side MindUP™.
- Consistent with previous studies, findings demonstrate that children's demographic variables (i.e., grade and sex) are significant factors associated with children's development of social and solo SR/L in kindergarten classrooms (Blair et al., 2011; Hutchinson, 2013; Matthews et al., 2009; Suchodoletz et al., 2013).
- Findings support previous research indicating that teacher factors, including behaviour attributions and feelings of personal accomplishment are associated with the opportunities they provide for SR/L in classrooms (Hutchinson, 2013; Perry 1998), specifically when implementing MindUP™ (Carvalho et al., 2017).
- Finally, this is the first study to relate teachers' perceptions of changes in their kindergarten classrooms as a result of implementing MindUP™ to young children's SR/L.