Influence of mothers' parenting styles on self-regulated academic learning among Saudi primary school students

Tahany Alnafea and David D. Curtis
Flinders University, South Australia

Much of the research on self-regulation has investigated the influence of school settings. However, fewer studies have concentrated on the home environment and its influence on student's academic behaviour in school. The present research investigates the influence of mothers' parenting styles on students' self-regulated learning behaviours in schools. The research included 351 primary students (11 and 12 years-old) and their mothers in the Kingdom of Saudi Arabia. The research was conducted using a cross-sectional survey design in which mothers were asked to complete a *Parenting Styles Questionnaire* (Robinson, Mandleco, Olsen & Hart, 1995) and their children completed a modified form of the *Motivated Strategies for Learning Questionnaire* (Pintrich, Smith, Garcia & McKeachie, 1991). Results differ from what had been reported in the literature. We find that Saudi mothers tend to be authoritative rather than authoritarian (cf. Dwairy et al. 2006; Achoui, 2003). We find that authoritative styles are significantly and positively related to students' self-efficacy, cognitive and metacognitive strategy use, and study and time management, whereas permissive styles are significantly but negatively correlated to self-efficacy and metacognitive self-regulation. Authoritarian styles have a small negative influence on time and study management and a small positive influence on help seeking, both effects being marginally significant.

Introduction

Over the last few decades, researchers have stressed the significance of learners assuming spontaneous responsibility for and control of their acquisition of skills and knowledge (Zimmerman, 1990). Numerous studies have investigated potential variables that influence the development of self-regulated learning (e.g., Zimmerman & Martinez-Pons, 1990; Bråten & Strømsø, 2005; Perry, VandeKamp, Mercer & Nordby, 2002). A growing body of research has focused on the influence of school contexts such as social interactions with peers and teachers (e.g., Perry, VandeKamp, Mercer & Nordby, 2002; Paris & Paris, 2001), classroom motivational effects and goal orientation (Young, 2005; Bouffard, Boisvert, Vezeau & Larouche, 1995), and academic attitude (Pekrun, Goetz, Titz & Perry, 2002). Of particular interest in the current study is how home contexts might influence aspects of learners' self-regulated learning.

Though much research into self-regulated learning has been conducted on school contexts, few studies have concentrated on other factors like family environment. Grolnick and Ryan (1989) emphasised how home and school contexts are related since the beliefs that children acquire and the way they are treated at home contribute to how they behave academically. This view was supported by Epstein (1989, p. 290) who wrote: "It is imperative to study the family along with the school to understand contextual effects on student motivation and learning". It is argued that an essential role of parents is to influence, control, and teach their children (Pomerantz, Grolnick & Price, 2005; Darling, 1999).

In this study, we investigate the relationship between mothers' parenting styles (PS) and aspects of their children's self-regulated learning (SRL) in the belief that certain approaches to parenting would be more effective in promoting SRL. We deliberately focused on mothers and excluded fathers from this study, in order to eliminate one source of variance, and because mothers exert a greater influence on their children's learning (e.g. Leung, McBride-Chang & Lai, 2004). The study was undertaken in seven schools in the Sharqia region of the Kingdom of Saudi Arabia (KSA) and we received completed surveys from 351 children and their mothers. Saudi Arabia provides a particular cultural context for the study of the PS-SRL relationship compared with many previous studies conducted in Western and Asian countries (e.g. Purdie, Carroll & Roche, 2004; Watabe and Hibbard, 2014). One aspect of cultural difference is that all boys and girls in KSA attend single-sex schools. Another aspect is that Saudi Arabia is regarded as a socially conservative country and Muslim parents believe that the ideal child is closely tied with the traditional values and morals in Islamic culture including self-discipline, good manners, respect for elders, and good academic outcomes (Alsheikh, Parameswaran & Ethoweris, 2010). We used a version of the *Parenting Styles Questionnaire* (PSQ, Robinson, Mandleco, Olsen & Hart, 1995) to assess mothers' parenting styles and a version of the *Motivated Strategies for Learning Questionnaire* (MSLQ, Pintrich, Smith, Garcia & McKeachie, 1991) to assess students' SRL.

Self-regulated learning

Self-regulated learning has its roots in several distinctive learning theories that are complementary in representing the development of self-regulation. Bandura's social cognitive learning theory (2001, 1986) greatly assisted cognitive psychologists by providing a key element that led to the creation of self-regulated learning theory (Schunk & Zimmerman, 2007; Perry, Turner & Meyer, 2006). The existence of SRL was based on the three reciprocal interactions of Bandura's model: self or personal influences (e.g. attitudes and beliefs), behavioural, and environmental factors (Bruning et al., 2011; Schunk & Zimmerman, 2007). As definitions of SRL vary depending on researchers' theoretical orientations, Zimmerman's conceptualisation of SRL (1989) was broadly consistent with Bandura's model. Zimmerman classified SRL into three dominant components, metacognitive, motivational, and behavioural processes.

Metacognitive processes are used by self-regulating students who use their knowledge of cognition (declarative, procedural, and conditional knowledge) (Bruning et al., 2011; Jacobs & Paris, 1987). Moreover, they have the capability to regulate their cognition through planning, monitoring, and evaluating processes. Self-regulated learners have constructive motivational dispositions. They have higher levels of self-efficacy than others as they are more flexible in incorporating critical factors such as goal setting, persistence, help seeking, and task engagement (Zimmerman & Martinez-Pons, 1990). Attribution theory stated that self-regulated learners attribute their success to internal, stable, and controllable traits, which increases their confidence to succeed again (Schunk, 2008; Bruning et al., 2011). Self-determination theory argued that they are more autonomous as they feel a greater sense of control, leading to more task-related effort, increased persistence, and better use of feedback (Zimmerman & Schunk, 2012). Self-regulated learners display high-level behavioural processes. They are more able than other learners

to self-reinforce during enactments and self-instruct during acquisition (Zimmerman, 2013; Rohrkemper 1989). In other words, they have the ability to select, adjust, and structure convenient learning environments for themselves to better achieve their goals. They seek out information, advice, and places to facilitate their learning.

Zimmerman (2002) described three essential phases of self-regulatory processes: the forethought phase (task analysis, planning, self-motivation, beliefs), the performance phase (self-control, self-instruction, attention, self-observation), and the self-reflection phase (self-judgment, evaluation, casual attribution, self-reaction). As the triadic reciprocal causation in Bandura's learning theory sets the theoretical groundwork for the development of self-regulated learning models, the self-regulated learning variables selected in the present study are based upon Bandura's social cognitive model and the conceptualisation of self-regulated learning as defined by Zimmerman (2013, 2002, 1989).

As noted above, Zimmerman (1989) did not include an environmental component in his model of self-regulation as Bandura did. However, he concentrated on how behavioural techniques and strategies could assist learners in creating a convenient learning environment. In contrast, Bandura counted on the environmental aspect as a main component that included factors like social and cultural traits, which can have an immediate influence on students' academic behaviour and outcomes. He believed that learner's academic behaviour is a product of an external source of influence (Zimmerman, 1989). This supports the study's hypothesis that mothers' parenting styles (as an external environmental factor) would play a substantial role in students' self-regulated learning (their academic behaviour).

Parenting styles

The concept of parenting style is utilised to capture variations in parents' attitudes in controlling and socialising their child (Huang & Prochner, 2003). PS is a general construct representing the entire emotional tone of the parent-child relationship (Masud, Ahmad, Jan & Jamil, 2016). According to Maccoby and Martin (1983) and Baumrind (1971, 1989, 1991), parenting styles comprised the two dimensions of demandingness and responsiveness. Demandingness refers to parents' maturity demands, control or disciplinary efforts, supervision, and willingness to scold the child who disobeys. Responsiveness refers to how parents foster self-regulation, individuality, and self-assertion in their children by their own warmth, involvement, and acceptance, and by being supportive, attuned, and acquiescent to their children' needs.

Baumrind (1971) conceptualised eight parenting styles including nonconforming, authoritative nonconforming, and rejecting-neglecting. Meanwhile, Baumrind (1991) incorporated sex-role traditional as a supplemental form of parenting style. This form considers those parents who use different parenting styles depending on their children's gender. Research on parenting style has concentrated on three types of parenting styles that are seen as prevalent and inclusive: (a) authoritarian, (b), authoritative, and (c) permissive (Baumrind & Black, 1967; Gonzalez, Holbein & Quilter, 2002). The three-part classification can be related to Baumrind's styles by noting that authoritarian parents are

demanding and rejecting; authoritative parents are demanding and accepting; and permissive parents are liberal and rejecting. Authoritarian parents place high demands, enforce strict discipline (Leung & Kwan, 1998), are extremely controlling, and have poor affiliated relationships with their children (Aunola, Stattin & Nurmi 2000).

In contrast, authoritative parents depend on explanations of rules rather than enforcing strict discipline and obedience (Gonzalez, Holbein & Quilter, 2002), encourage parental involvement, promote open communication, and boost their child's confidence (Aunola, Stattin & Nurmi, 2000). Permissive parents exert very little control, encourage autonomous decision-making, and enable their children to regulate their own activities without being involved themselves (Dwairy et al., 2006). They avoid confrontations and tend to be supportive and warm towards their children's unfavourable behaviours, exhibit non-controlling behaviours, make few demands, and use minimal punishment (Driscoll, Russell & Crockett, 2008).

Multidimensional studies of PS and SRL

There is plentiful Western literature on parenting style and self-regulated learning; however, few studies investigating these constructs' relationships have been reported from other cultures. Moreover, no studies were found on direct relationships between PS and SRL in the Saudi context. Since Baumrind first proposed her parenting style model in 1971, Western researchers have concentrated their attention on the relationships between PS and the potential aspects that could improve children's performance in school. Most of the research on PS undertaken in Western cultures shows that an authoritative parenting style seems to be highly correlated with academic success when compared to permissive and authoritarian styles (e.g., Abar, Carter & Winsler, 2009; Juang & Silbereisen, 1999).

Purdie, Carroll and Roche (2004) investigated the association between parenting behaviour and adolescents' SRL process in Australia, and found a substantial correlation between parenting practices and student's academic self-regulation, which influenced school related behaviour. Erden and Uredi (2008) explored the effect of perceived PSs on SRL strategies and motivational beliefs in primary school children in Turkey. They reported that the dimensions of SRL, namely task value, self-efficacy, and cognitive and metacognitive SRL strategies were influenced by PS. They also noticed that students with authoritative parents used more cognitive and metacognitive strategies and had higher task value and self-efficacy than students of authoritarian and indulgent (permissive) parents. It is surprising to discover that these findings are mostly confined to the Western cultures and may not apply to other societies with different cultures, morals, values, and beliefs.

When considering non-Western cultures, few studies were found in respect to how PS influences students' SRL. Some of the earlier research performed in Asian countries such as China, differed considerably in their findings compared with other cultures. Western parents appeared to be mostly authoritative with their children, yet Asian research revealed that Chinese parents tend to be more authoritarian (Dornbusch et al., 1987; Sue & Abe, 1995; Chao, 2001). When applying authoritarian child-rearing practices in an authoritarian culture (Chao, 1994; Chao, 2001), it appears that this style has a different

meaning and effect from what is observed in the West. For example, while an authoritarian parenting style is found to be related to poor academic performance in European-American societies, most students from Asian countries were found to outperform European-American students (Sue & Abe, 1995; Chao, 1994; Chao, 2001). Dornbusch et al. (1987) asked a number of high school students in the United States to score their parents' level of control. The results indicated that students of Asian background scored highest on authoritarian parenting style, but they received the highest grade-point averages compared with other students.

Nonetheless, more recent research (e.g. Huang & Prochner, 2003; Watabe & Hibbard, 2014; Kelley, 2004) provided contrary findings, reporting that child-rearing practices in China and Japan are deemed authoritative and this style was positively and significantly related to children's ratings of SRL. Chao (1994) stated that "Parental influences are not appropriate predictors of school success for Asian youngsters" (p. 1112). Thus, it is assumed that parenting styles in the Arab or Muslim world might also vary in their influence on children's self-regulated learning compared with previous studies undertaken elsewhere.

Despite a diligent search, no studies were found that investigate the effect of parenting styles on students' self-regulated learning in Saudi Arabia. However, some studies reported that parenting styles in Saudi Arabia and other Islamic countries tend to be authoritarian (Dwairy et al., 2006; Alsheikh, Parameswaran & Ethoweris, 2010; Achoui, 2003). This begs the question whether authoritarian PS are understood in the same way in Arab or Islamic cultures as they are in Chinese cultures.

In an Iranian study, authoritative parenting was found to significantly affect university students' self-efficacy more than authoritarian and permissive parenting styles (Tozandehjani, Tavakolizadeh & Lagzain, 2011). Susanadari (2014) found that authoritative parenting styles have a positive influence on self-efficacy in Indonesian high school students. EbrahimMadahi, Liaghat & Madah (2013) studied the effect of parenting practices on other components of SRL and found that Iranian parents who were assertive and responsive with their children reported significant correlations with self-regulated learning factors including cognitive and metacognitive processes. It should be noted that all cultures mentioned above differ from one another. For example, Eastern-Asian parents are considered strict with their children compared with Western parents. Another point is that Iran and Indonesia are Muslim countries, but they are less conservative than Saudi Arabia. Additionally, all these cultures have mixed-sex schools. Typically, these cultural and educational characteristics may influence SRL directly or influence PS that therefore may influence SRL through their influence on PS.

In conclusion, despite the differences between studies it is notable that authoritative parenting appears to be positively associated with productive student academic behaviours compared with other parenting styles. While the earlier research done in China (Dornbusch et al., 1987) revealed that authoritarianism enhances children's academic performance, later research (e.g. Huang & Prochner, 2003; Watabe & Hibbard, 2014; Kelley, 2004) in the same culture reported contrary findings that concurred with the

majority of findings in other cultures (e.g. Abar, Carter & Winsler, 2009; Juang & Silbereisen, 1999).

Research purpose

Although the literature on PS and SRL reveals a generally positive relationship, some inconsistency is evident and this might due to the various ethnicities, cultural backgrounds, and socioeconomic status of parents. Thus, in order to add to the knowledge base on the impact of PS on children's SRL, there is a need for more studies to be conducted, especially in countries that have no research on this relationship such as the KSA. Based on the findings from the literature, we hypothesised that there is a relationship between the PS (authoritarian, authoritative, or permissive) of mothers and key aspects of their primary school children's SRL (motivation, metacognition, and learning behaviour) in Saudi Arabia.

Methods

Sampling

A convenience sampling method was employed in this study. The population for this study comprised fifth and sixth graders (11 to 12 years-old) and their mothers. Seven primary school principals (from four female schools and three male schools) in three cities (Dammam, Jubail, and Industrial Jubail) in the Sharqia region of Saudi Arabia were asked for permission to approach children and parents in their schools. In all cases, this permission was granted. The number of students and mothers approached from those schools was 860 (510 females, 350 males; 11-12 years-old). After scrutinising returned envelopes, around 250 students (29%) did not hand the envelopes back and 94 (11%) students and their mothers did not complete the questionnaires. In all, 516 mothers (60% of the approached sample) agreed to take part in this study as they and their child signed the consent forms included in the envelope. Of the 516 returned envelopes, 165 envelopes (19%) were excluded from this study because they were without names, some students' names were not found in the class lists, some questionnaires had the same rating point for all items, or some of the mother's questionnaires were either blank or had answers that clearly (based on their handwriting) were provided by the child. Therefore, from the whole approached sample, only 351 (41%) students and their mothers were included in this analysis: 218 females (62%) and 133 males (38%) of the achieved sample.

The region that this sample is taken from is relatively more affluent than other regions in Saudi Arabia. It generally regarded as a socially less conservative, especially in the three selected cities in this study. Usually, people in those cities readily accept change in order to improve the society and production. Government and private schools (but not international schools) in Saudi Arabia follow the same educational system and curriculum. Classes that boys and girls take in school are slightly different. For instance, boys have sport and patriotism classes but do not have house management classes (cooking and sewing).

Procedures

After receiving approval from the Social and Behavioural Research Ethics Committee (SBREC), approval from the KSA Education Administration (Planning and Development Department) and gaining the permission of the seven school principals to conduct the study, the researcher (in girls schools) or her assistant (in the boys schools) introduced the researcher, explained the purpose of the research, and outlined the procedures for completing and returning questionnaires. They distributed the envelopes on the first day of their visits to schools. Envelopes were distributed and the students asked to take the envelope home and hand it to their mothers for completion. Each envelope contained a copy of a letter introducing the researcher, an information sheet, a consent form for the mother and child, a questionnaire for mothers concerning their parenting styles, and a questionnaire for students concerning their motivation and use of learning strategies. A day later, the researcher or her assistant collected the envelopes from students. As many students had forgotten to bring the envelopes back on the first day of collection, they visited the schools again for another collection. Participation in the study was voluntary and confidential as envelopes were returned, whether or not the questionnaires had been completed.

Instruments

We used adapted versions of the PSQ (Robinson, Mandleco, Olsen & Hart, 1995) to measure parenting styles and the MSLQ (Pintrich, Smith, Garcia & McKeachie, 1991) to measure self-regulated learning. The shortened versions were used because they were found in previous studies to be sufficiently reliable and because we wanted to maximise response rates from both children and their mothers.

Parenting style questionnaire
The Parenting Style Questionnaire (PSQ) was developed by Robinson et al. (1995) to measure the parenting style that is predominantly utilised when rearing children. This instrument was especially designed for parents of pre-adolescent children. The original PSQ consists of 62 items as the authoritative scale has 27 items with a Cronbach alpha of .91, the authoritarian scale has 20 items with a Cronbach alpha of .86, and the permissive scale has 15 items with a Cronbach alpha of .75. For the current study, we used a version of the PSQ adapted by Moghadam, Hemmatinezhad, Behrozi and Ahmadzade (2014). The revised instrument included only 30 items reflecting the three identified parenting styles. The authoritative and authoritarian styles had 13 items each, while the permissive style had only 4 items (See Appendix 1). Moghadam et al. (2014) administered the adapted PSQ instrument to 704 students (14 to 17 year-olds) and reported an acceptable reliability (alpha=.83) for the instrument as a whole. They did not report Cronbach alpha values for the separate scales. A six-point Likert scale that ranges from 1= never to 6= always is used for all items. We discuss below several limitations of the revised PSQ that emerged in the analysis of the data we collected.

Motivated strategies for learning questionnaire
The Motivated Strategies for Learning Questionnaire (MSLQ) is a self-report instrument

that was designed by Pintrich, Smith, Garcia and McKeachie (1991) to assess students' motivation and use of self-regulated learning strategies. The latest version of the MSLQ has 81 items that are rated on a 7-point Likert scale ranging from 1= not at all true of me to 7= very true of me. This questionnaire was designed for college students; however, it has been used successfully with children and is judged to be a suitable instrument for assessing their SRL (Karadeniz et al., 2008; Eshel & Kohavi, 2003; Andreou & Metallidou, 2004; Shih, 2005). To make this instrument appropriate for pre-adolescent children in the current study, some factors were excluded and fewer items were included from each sub-construct.

The adapted questionnaire used in this study consisted of scales for: (a) task value (6 items) and self-efficacy (4 items) to measure the motivation component, (b) strategy use (9 items) and metacognitive self-regulation (7 items) to measure metacognitive processes, (c) time and study management (5 items) and help seeking (4 items) to measure management (behavioural) component (See Appendix 2). A few items were simplified when they were translated to Arabic to help children better interpret the items. Shortening and adapting the MSLQ to accommodate younger participants is considered appropriate by the instrument's author and other researchers (e.g. Wolters & Pintrich, 2001; Shih, 2005). The main aim of making the MSLQ shorter and with more focused questions was to increase the response rate and encourage respondents to answer all questions conscientiously with consistent understanding of the statements.

Data analysis

The collected data were entered into *Statistical Package for the Social Sciences* (SPSS, Version 21) to identify relationships between PS and components of SRL. Descriptive statistics and multiple regression are used to investigate relationships between PS and SRL factors.

Missing data

In the present study, there was less than 2% missing data in all investigated variables. Due to the small percentage of missing data, it was deemed unnecessary to use any missing data techniques such as mean substitution or multiple imputation. The default case deletion approach was used.

Results

Reliability analysis

A Cronbach alpha was calculated for each scale to examine if the items were internally consistent, stable, and homogenous. The alpha values of the subscales of shortened forms of the MSLQ and PSQ are displayed in Table 1. From the internal consistency estimates of reliability for the MSLQ, Cronbach's alpha coefficients of all scales were above .75 with the exception of the time and study management factor (.66) and help seeking (.64). For the PSQ, the table shows that the first two subscales (authoritative and authoritarian) had acceptable internal consistency and their values of Cronbach's alpha were higher than .75,

while the permissive PS subscale was .40. A value below .6 is unacceptable since it is an indication of an unreliable scale. Field (2014) argued that when dealing with psychological factors, low values are expected due to the diversity of the constructs being measured. The permissive PS scale has only 3 items (after removing one item with a low factor loading), and that could be the reason for the low value of alpha for this construct.

Table 1: Reliability analysis of MSLQ and PSQ sub-scales

Scale	Sub-scale	Factor	Items	Cronbach's alpha
The Motivated Strategy for Learning Questionnaire (MSLQ)	Motivation	Task value	6	.754
		Self-efficacy	4	.796
	Metacognition	Cognitive and metacognitive strategies	9	.822
		Metacognitive self-regulation	7	.822
	Resource management	Time and study environment	5	.664
	Help-seeking		4	.641
The Parenting Style Questionnaire (PSQ)	Authoritative		13	.887
	Authoritarian		13	.770
	Permissive		4	.397

Relationship between PS and SRL

Before determining if there is a relationship between PS and SRL, some descriptive statistics were generated. Table 2 shows the means and standard deviations of the three types of parenting styles: authoritative, authoritarian, and permissive. These descriptive statistics provide data about how broadly each type of PS is used by mothers in the Saudi context. Unexpectedly, the descriptive statistics revealed that the Saudi mothers perceive themselves as more inclined towards the authoritative PS ($M = 5.04, SD = .83$) than the authoritarian or the permissive PS. Given the low reliability of the permissive scale, we compared the means of the authoritarian and authoritative scales. The difference of 1.53 was found to be statistically significant, t(350) = 24.1, p<.001, favouring the authoritative style. This differs from the finding by Dwairy et al. (2006) that Saudi parents are authoritarian.

Table 2: Descriptive statistics of the PS scales

Scale	N	Mean	SD	Skewness
Authoritarian	351	3.51	0.86	0.01
Authoritative	351	5.04	0.83	-1.57
Permissive	349	2.48	1.02	0.54

To examine the strength of the relationship between PS and SRL, multiple regression models were tested between the sub-constructs of the MSLQ (task value, self-efficacy, cognitive and metacognitive strategy use, metacognitive self-regulation, time and study management, help-seeking) as outcome measures and the three parenting styles assessed by the PSQ (authoritative, authoritarian, and permissive) as explanatory variables.

Multiple regression model

Multiple regression analyses were run for each SRL sub-scale as a dependent variable to investigate their relationships with the three types of PS as predictors. Table 3 shows the unstandardised (*B*) and standardised (beta) regression parameters and its significance level (*p*) of each of the three PSs to examine their unique influence on each SRL component. By way of example, the regression model for task value (TV) on the three parenting styles is shown as an equation below:

$$TV = B_0 + B_1.\text{Authoritative} + B_2.\text{Authoritarian} + B_3.\text{Permissive} + r$$

where B_0 is the regression intercept (constant), B_1, B_2 and B_3 are the regression coefficients for the three parenting styles respectively, and r is the residual term.

Table 3: Multiple regression coefficients for SRL factors on PS

SRL	Authoritative			Authoritarian			Permissive		
Sub-scale	B	β	p	B	β	p	B	β	p
TV	.44	.06	.214	-.41	-.06	.256	-.31	-.06	.303
SE	.72	.15	.004	-.35	-.07	.172	-.43	-.11	.049
CMSU	1.39	.12	.024	-.09	-.00	.885	-.44	-.04	.416
MSR	.51	.05	.301	.30	.58	.557	-.92	-.12	.036
TSM	.70	.13	.011	-.51	-.10	.072	-.39	-.09	.104
HS	.42	.08	.127	.51	.10	.073	-.18	-.04	.443

Note: Task value (TV), self-efficacy (SE), cognitive and metacognitive strategy use (CMSU), metacognitive self-regulation (MSR), time and study management (TSM), help seeking (HS)

The regression model showed that authoritative PS has significant positive influences on students' self-efficacy, cognitive and metacognitive strategy use, and time and study management, although the effect sizes are small (see the beta parameters in Table 3). For each unit increase in the authoritative PS there is an increase in these three components of SRL in students (.729, 1.39, .703, respectively). In contrast, the permissive PS has significant negative influences on students' self-efficacy and metacognitive self-regulation, although the effect sizes are small. A one unit increase in the permissive PS is associated with a decrease in these two factors of SRL in students (-.433, -.923, respectively). The authoritarian PS has two marginally significant and weak influences - a negative influence on time and study management (p=.07) and a weak positive influence on help-seeking (p=.07). Task value was the only SRL factor that was not significantly predicted by any of the PS (p>.05). We find positive effects of the authoritative PS on self-efficacy, time and study management, and cognitive and metacognitive strategy use, and negative effects of the permissive PS on self-efficacy and metacognitive self-regulation, with two weak and marginally significant influences of the authoritarian style (negative on time and study management and positive on help-seeking).

Discussion

The main purpose of the present study was to determine whether PS is associated with primary school students' SRL in Saudi Arabia. We find evidence that the authoritative

parenting style is associated with enhanced self-efficacy, cognitive and metacognitive strategy use, and time and study management. Conversely, a permissive parenting style is associated with reduced self-efficacy, time and study management, and metacognitive self-regulation.

The mothers in our study tended to adopt an authoritative parenting style with their children. The fact that most Saudi mothers perceive themselves as authoritative rather than authoritarian is a departure from what has been reported previously; that Saudi parents appeared to be authoritarian and use controlling and restrictive child-rearing strategies (Dwairy et al., 2006; Achoui, 2003). Those studies included fathers and mothers, so perhaps fathers are more authoritarian than mothers. The most recent study to report those findings was published a decade ago, during which time social and economic growth and a substantial movement in education and family structure in Saudi societies could have played a role in changing rearing children practices in Saudi Arabia.

Limitations

The study has several limitations. The instrument selected to measure parenting style, the Parenting Style Questionnaire, included only four items that measured the permissive style. One of those items was found to have a low loading on the permissive factor and was removed from subsequent analyses. A consequence of the small number of items is a higher relative error in the measurement of this construct and this in turn is likely to attenuate associations between this and other measures, including measures of aspects of SRL. The authoritarian parenting style was found to be slightly skewed (see Table 2). This may be a consequence of a ceiling effect for this scale and may reflect social desirability bias in responses. In future studies, additional items need to be developed and tested to measure the permissive style more completely and a measure of social desirability could be included to investigate whether this is likely to bias responses to items in the PS scales.

In this study, we focused on mothers' parenting style and excluded fathers. This decision was taken to eliminate a source of variation in responses. However, it is possible that the greater authoritarian style evident in previous studies (Dwairy et al., 2006; Alsheikh, Parameswaran & Ethoweris, 2010; Achoui, 2003) may reflect fathers' rather than mothers' preferred parenting style. Furthermore, in this study, we collected data from one region (Sharqia) in Saudi Arabia. While Saudi Arabia is regarded as traditional and conservative, not all regions share these values equally and the findings of this study may not apply to Saudi Arabia generally. Although not stated explicitly, the previous studies may have been conducted in other regions and therefore may have sampled a different set of views than we did.

Conclusion

The findings from the current study revealed some evidence about a relationship between parenting style and self-regulated learning. Mothers in this study tend to be authoritative but not authoritarian. Parenting style does play a role in key aspects of SRL. An authoritative parenting style is positively and significantly correlated with self-efficacy,

cognitive and metacognitive strategy use, and time and study management. It was also shown that permissiveness is negatively and significantly related to self-efficacy and metacognitive self-regulation, whereas the authoritarian PS has a marginally significant and small negative relationship with time and study management and a marginally significant and small positive relationship with help seeking.

Implications for future research

The following suggestions and recommendations are made concerning future research:

i.   Due to the lack of research on PS and SRL in Saudi Arabia, further studies should be conducted in other regions of KSA, and include fathers.
ii. Because of the possibility of social desirability bias, use a social desirability scale (e.g. a short form of the Marlowe-Crowne scale, Reynolds, 1982).
iii. While our focus was on the relationship between parenting styles and self-regulated learning, we suggest that further research is required into the three scales of the PSQ. Specifically, additional items are required for the permissive scale and the authoritarian scale items could be revised or new items developed.

Acknowledgment

References

Abar, B., Carter, K. L. & Winsler, A. (2009). The effects of maternal parenting style and religious commitment on self-regulation, academic achievement, and risk behavior among African-American parochial college students. *Journal of Adolescence*, 32(2), 259-273. http://www.sciencedirect.com/science/article/pii/S0140197108000316

Achoui, M. (2003). Taa'dib al atfal fi al wasat al a'ai'li: Waqea'wa ittijahat [Children disciplining within the family context: Reality and attitudes]. *Al tofoolah A Arabiah*, 16(4), 9-38.

Alsheikh, N. O., Parameswaran, G. & Ethoweris, H. (2010). Parenting style, self-esteem and student performance in the United Arab Emirates. *Current Issues in Education*, 13(1), 1-23. https://cie.asu.edu/ojs/index.php/cieatasu/article/view/265

Andreou, E. & Metallidou, P. (2004). The relationship of academic and social cognition to behaviour in bullying situations among Greek primary school children. *Educational Psychology*, 24(1), 27-41. http://dx.doi.org/10.1080/0144341032000146421

Aunola, K., Stattin, H. & Nurmi, J. E. (2000). Parenting styles and adolescents' achievement strategies. *Journal of Adolescence*, 23(2), 205-222. https://doi.org/10.1006/jado.2000.0308

Bandura, A. (1986). The explanatory and predictive scope of self-efficacy theory. *Journal of Social and Clinical Psychology*, 4(3), 359-373. https://doi.org/10.1521/jscp.1986.4.3.359

Bandura, A. (2001). Social cognitive theory: An agentic perspective. *Annual Review of Psychology*, 52(1), 1-26. https://doi.org/10.1146/annurev.psych.52.1.1

Baumrind, D. (1991). Effective parenting during the early adolescent transition. *Family Transitions*, 2(5), 111-163. http://psycnet.apa.org/record/1991-97352-005

Baumrind, D. (1971). Current patterns of parental authority. *Developmental Psychology Monographs*, 4(1, Pt.2), 1-103. http://psycnet.apa.org/doi/10.1037/h0030372

Baumrind, D. & Black, A. E. (1967). Socialization practices associated with dimensions of competence in preschool boys and girls. *Child Development*, 38(2), 291-327. http://www.jstor.org/stable/1127295

Baumrind, D. (1989). Rearing competent children. In W. Damon (Ed.), *Child development today and tomorrow*, pp. 349-378. San Francisco: Jossey-Bass.

Bråten, I. & Strømsø, H. I. (2005). The relationship between epistemological beliefs, implicit theories of intelligence, and self-regulated learning among Norwegian postsecondary students. *British Journal of Educational Psychology*, 75(4), 539-565. https://doi.org/10.1348/000709905X25067

Bruning, R. H., Schraw, G. J. & Norby, M. M. (2011). *Cognitive psychology and instruction*. (5th ed.). Upper Saddle River, NJ: Pearson.

Bouffard, T., Boisvert, J., Vezeau, C. & Larouche, C. (1995). The impact of goal orientation on self-regulation and performance among college students. *British Journal of Educational Psychology*, 65(3), 317-329. https://doi.org/10.1111/j.2044-8279.1995.tb01152.x

Chao, R. K. (2001). Extending research on the consequences of parenting style for Chinese Americans and European Americans. *Child Development*, 72(6), 1832-1843. https://doi.org/10.1111/1467-8624.00381

Chao, R. K. (1994). Beyond parental control and authoritarian parenting style: Understanding Chinese parenting through the cultural notion of training. *Child Development*, 65(4), 1111-1119. https://doi.org/10.1111/j.1467-8624.1994.tb00806.x

Darling, N. (1999). Parenting style and its correlates. *ERIC Digest*, ED 427896. https://eric.ed.gov/?id=ED427896

Dornbusch, S. M., Ritter, P. L., Leiderman, P. H., Roberts, D. F. & Fraleigh, M. J. (1987). The relation of parenting style to adolescent school performance. *Child Development*, 58(5), 1244-1257. http://www.jstor.org/stable/1130618

Driscoll, A. K., Russell, S. T. & Crockett, L. J. (2008). Parenting styles and youth well-being across immigrant generations. *Journal of Family Issues*, 29(2), 185-209. https://doi.org/10.1177/0192513X07307843

Dwairy, M., Achoui, M., Abouserie, R., Farah, A., Sakhleh, A. A., Fayad, M. & Khan, H. K. (2006). Parenting styles in Arab societies: A first cross-regional research study. *Journal of Cross-Cultural Psychology*, 37(3), 230-247. https://doi.org/10.1177/0022022106286922

Epstein, J. L. (1989). Family structures and student motivation: A developmental perspective. *Research on Motivation in Education*, 3, 259-295.

EbrahimMadahi, M., Liaghat, R. & Madah, L. (2013). Study of the effects of parenting styles and self-regulation on academic achievement. *International Research Journal of Applied and Basic Sciences*, 4(1), 19-24.

Erden, M. & Uredi, I. (2008). The effect of perceived parenting styles on self-regulated learning strategies and motivational beliefs. *International Journal about Parents in Education*, 2(1), 25-34. http://www.ernape.net/ejournal/index.php/IJPE/article/view/69/54

Eshel, Y. & Kohavi, R. (2003). Perceived classroom control, self-regulated learning strategies, and academic achievement. *Educational Psychology*, 23(3), 249-260. http://dx.doi.org/10.1080/0144341032000060093

Field, A. (2014). *Discovering statistics using SPSS* (4th ed.). London: SAGE.

Grolnick, W. S. & Ryan, R. M. (1989). Parent styles associated with children's self-regulation and competence in school. *Journal of Educational Psychology*, 81(2), 143-154. http://psycnet.apa.org/doi/10.1037/0022-0663.81.2.143

Gonzalez, A. R., Holbein, M. F. D. & Quilter, S. (2002). High school students' goal orientations and their relationship to perceived parenting styles. *Contemporary Educational Psychology*, 27(3), 450-470. https://doi.org/10.1006/ceps.2001.1104

Huang, J. & Prochner, L. (2003). Chinese parenting styles and children's self-regulated learning. *Journal of Research in Childhood Education*, 18(3), 227-238. http://dx.doi.org/10.1080/02568540409595037

Jacobs, J. E. & Paris, S. G. (1987). Children's metacognition about reading: Issues in definition, measurement, and instruction. *Educational Psychologist*, 22(3-4), 255-278. http://dx.doi.org/10.1080/00461520.1987.9653052

Juang, L. P. & Silbereisen, R. K. (1999). Supportive parenting and adolescent adjustment across time in former East and West Germany. *Journal of Adolescence*, 22(6), 719-736. https://doi.org/10.1006/jado.1999.0267

Karadeniz, S., Bueyuekoeztuerk, S., Akguen, O. E., Cakmak, E. K. & Demirel, F. (2008). The Turkish adaptation study of Motivated Strategies for Learning Questionnaire (MSLQ) for 12-18 year old children: Results of confirmatory factor analysis. *The Turkish Online Journal of Educational Technology*, 7(4), 72-89. http://files.eric.ed.gov/fulltext/ED503477.pdf

Kelley, M. F. (2004). Chinese parenting styles and children's self-regulated learning. *Childhood Education*, 81(1), 62-63. http://go.galegroup.com/ps/anonymous?id=GALE%7CA124077909

Leung, C. Y. W., McBride-Chang, C. & Lai, B. P. Y. (2004). Relations among maternal parenting style, academic competence, and life satisfaction in Chinese early adolescents. *The Journal of Early Adolescence*, 24(2), 113-143. https://doi.org/10.1177/0272431603262678

Leung, P. W. L. & Kwan, K. S. F. (1998). Parenting styles, motivational orientations, and self-perceived academic competence: A mediational model. *Merrill-Palmer Quarterly,* 44(1)*,* 1-19.

Maccoby, E. E. & Martin, J. A. (1983). Socialization in the context of the family: Parent-child interaction. In P. H. Mussen & L. Carmichael (Eds.), *Handbook of child psychology.* New York: John Wiley.

Masud, H., Ahmad, M. S., Jan, F. A. & Jamil, A. (2016). Relationship between parenting styles and academic performance of adolescents: Mediating role of self-efficacy. *Asia Pacific Education Review*, 17(1), 121-131. https://link.springer.com/article/10.1007/s12564-015-9413-6

Moghadam, S. A., Hemmatinezhad, M. A., Behrozi, A. & Ahmadzade, Z. (2014). The study of relationship between parenting styles, parenting practices and sex roles with physical activity levels, body mass index in 14-17 years old students. *International Journal of Sport Studies*, 4(1), 18-25. http://ijssjournal.com/fulltext/paper-07012016094937.pdf

Paris, S. G. & Paris, A. H. (2001). Classroom applications of research on self-regulated learning. *Educational Psychologist*, 36(2), 89-101. http://dx.doi.org/10.1207/S15326985EP3602_4

Pekrun, R., Goetz, T., Titz, W. & Perry, R. P. (2002). Academic emotions in students' self-regulated learning and achievement: A program of qualitative and quantitative research. *Educational Psychologist*, 37(2), 91-105. http://dx.doi.org/10.1207/S15326985EP3702_4

Perry, N. E., Turner, J. C. & Meyer, D. K. (2006). Classrooms as contexts for motivating learning. In P. Alexander & P. H. Winne (Eds.), *Handbook of educational psychology* (2nd ed.)., 327-348.

Perry, N. E., VandeKamp, K. O., Mercer, L. K. & Nordby, C. J. (2002). Investigating teacher-student interactions that foster self-regulated learning. *Educational Psychologist*, 37(1), 5-15. http://dx.doi.org/10.1207/S15326985EP3701_2

Pintrich, P. R., Smith, D. A. F., Garcia, T. & McKeachie, W. J. (1991). *A manual for the use of the Motivated Strategies for Learning Questionnaire (Technical Report 91-B-004).* Ann Arbor: The Regents of the University of Michigan.

Pomerantz, E. M., Grolnick, W. S. & Price, C. E. (2005). The role of parents in how children approach achievement. In A. J. Elliot & C. S. Dweck (Eds), *Handbook of competence and motivation*, 259-278. Guilford Press.

Purdie, N., Carroll, A. & Roche, L. (2004). Parenting and adolescent self-regulation. *Journal of Adolescence*, 27(6), 663-676. https://doi.org/10.1016/j.adolescence.2004.01.002

Robinson, C. C., Mandleco, B., Olsen, S. F. & Hart, C. H. (1995). Authoritative, authoritarian, and permissive parenting practices: Development of a new measure. *Psychological Reports*, 77(3), 819-830. https://doi.org/10.2466/pr0.1995.77.3.819

Rohrkemper, M. M. (1989). Self-regulated learning and academic achievement: A Vygotskian view. In B. J. Zimmerman & D. Schunk (Eds). *Self-regulated learning and academic achievement* (p. 143-168). New York: Springer.

Reynolds, W. M. (1982). Development of reliable and valid short forms of the Marlowe-Crowne social desirability scale. *Journal of Clinical Psychology*, 38(1), 119-125. https://doi.org/10.1002/1097-4679(198201)38:1<119::AID-JCLP2270380118>3.0.CO;2-I

Schunk, D. H. (2008). Metacognition, self-regulation, and self-regulated learning: Research recommendations. *Educational Psychology Review*, 20(4), 463-467. https://link.springer.com/article/10.1007/s10648-008-9086-3

Schunk, D. H. & Zimmerman, B. J. (2007). Influencing children's self-efficacy and self-regulation of reading and writing through modeling. *Reading & Writing Quarterly*, 23(1), 7-25. http://dx.doi.org/10.1080/10573560600837578

Shih, S. S. (2005). Taiwanese sixth graders' achievement goals and their motivation, strategy use, and grades: An examination of the multiple goal perspective. *The Elementary School Journal*, 106(1), 39-58.

Sue, S. & Abe, J. (1995). Predictors of academic achievement among Asian American and White students. In D. T. Nakanishi & T. Y. Nishida (Eds.), *The Asian American educational experience: A source book for teachers and students.* (pp. 302-321). New York: Routledge.

Susandari, T. (2014). *The influence of parenting, self efficacy, and anxiety on student achievement.* Unpublished thesis, Institut Pertanian Bogor, Indonesia [in Indonesian, with English abstract] http://repository.ipb.ac.id/handle/123456789/72192

Tozandehjani, H., Tavakolizadeh, J. & Lagzian, Z. (2011). The effect of parenting styles on self-efficacy and mental health of students. *The Horizon of Medical Sciences*, 17(2), 56-64. http://hms.gmu.ac.ir/browse.php?a_id=1197&sid=1&slc_lang=en

Young, M. R. (2005). The motivational effects of the classroom environment in facilitating self-regulated learning. *Journal of Marketing Education*, 27(1), 25-40. https://doi.org/10.1177/0273475304273346

Watabe, A. & Hibbard, D. R. (2014). The influence of authoritarian and authoritative parenting on children's academic achievement motivation: A comparison between the United States and Japan. *North American Journal of Psychology*, 16(2), 359-370. https://www.questia.com/library/journal/1G1-369068740/the-influence-of-authoritarian-and-authoritative-parenting

Wolters, C. A. & Pintrich, P. R. (2001). Contextual differences in student motivation and self-regulated learning in mathematics, English and social studies classrooms. In H. J. Hartman (Ed.), *Metacognition in learning and instruction: Theory, research and practice* (pp. 103-124). Netherlands: Springer.

Zimmerman, B. J. (2013). From cognitive modeling to self-regulation: A social cognitive career path. *Educational Psychologist*, 48(3), 135-147. http://dx.doi.org/10.1080/00461520.2013.794676

Zimmerman, B. J. & Schunk, D. H. (Eds.). (2012). *Self-regulated learning and academic achievement: Theory, research, and practice*. New York: Springer.

Zimmerman, B. J. (2002). Becoming a self-regulated learner: An overview. *Theory into Practice*, 41(2), 64-70. http://www.jstor.org/stable/1477457

Zimmerman, B. J. (1990). Self-regulated learning and academic achievement: An overview. *Educational Psychologist*, 25(1), 3-17. http://dx.doi.org/10.1207/s15326985ep2501_2

Zimmerman, B. J. (1989). A social cognitive view of self-regulated academic learning. *Journal of Educational Psychology*, 81(3), 329-339. http://psycnet.apa.org/doi/10.1037/0022-0663.81.3.329

Zimmerman, B. J. & Martinez-Pons, M. (1990). Student differences in self-regulated learning: Relating grade, sex, and giftedness to self-efficacy and strategy use. *Journal of Educational Psychology*, 82(1), 51-59. http://psycnet.apa.org/doi/10.1037/0022-0663.82.1.51

Appendix 1: Parenting style questionnaire

Note: All items for each scale use the response scale "Never 1 2 3 4 5 6 Always".

Authoritative parenting style
1. I am responsive to my child's feelings and needs.
2. I take my child's wishes into consideration before I ask him/her to do something.
3. I explain to my child how I feel about his/her good/bad behaviour.
4. I encourage my child to talk about his/her feelings and problems.
5. I encourage my child to freely "speak his/her mind", even if he/she disagrees with me.
6. I explain the reasons behind my expectations.
7. I provide comfort and understanding when my child is upset.
8. I compliment my child.
9. I consider my child's preferences when I make plans for the family (e.g. weekends and holidays).

10. I respect my child's opinion and encourage him/her to express them.
11. I treat my child as an equal member of the family.
12. I provide my child reasons for the expectations I have for him/her.
13. I have warm and intimate times together with my child.

Authoritarian parenting style
1. When my child asks me why he/she has to do something I tell him/her it is because I said so, I am your parent, or because that is what I want.
2. I punish my child by taking privileges away from him/her (e.g., TV, games, visiting friends).
3. I yell when I disapprove of my child's behaviour.
4. I explode in anger towards my child.
5. I spank my child when I don't like what he/she does or says.
6. I use criticism to make my child improve his/her behaviour.
7. I use threats as a form of punishment with little or no justification.
8. I punish my child by withholding emotional expressions (e.g., kisses and cuddles).
9. I openly criticise my child when his/her behaviour does not meet my expectations.
10. I find myself struggling to try to change how my child thinks or feels about things.
11. I feel the need to point out my child's past behavioural problems to make sure he/she will not do them again.
12. I remind my child that I am his/her parent.
13. I remind my child of all the things I am doing and I have done for him/her.

Permissive parenting style

1. I find it difficult to discipline my child.
2. I give into my child when he/she causes a commotion about something.
3. I spoil my child.
4. I ignore my child's bad behaviour.

Appendix 2: The Motivated Strategies for Learning Questionnaire (MSLQ)

Note: All items for each scale use the response scale "1= very untrue of me; 2= untrue of me; 3= somewhat untrue of me; 4= neutral; 5= somewhat true of me; 6= true of me; 7= very true of me".

1. I think I will be able to use what I learn in science in other courses.
2. It is important for me to learn the course material in science.
3. I am very interested in the content area of science.
4. I think the course material in science is useful for me to learn.
5. I like the subject matter science.
6. Understanding the subject matter of science is very important to me.
7. I believe I will receive an excellent grade in science.
8. I am certain I can understand the most difficult material presented in the readings for science.
9. I am confident I can do an excellent job on the assignments and tests science.
10. I am confident I can understand the most complex material presented by the instructor in science.
11. When I study for science, I practice saying the material to myself over and over.
12. I make lists of important terms for science and memorise the lists.
13. When reading for science, I try to relate the material to what I already know.

14. When I study for science, I write brief summaries of the main ideas from the readings and the concepts from the lectures.
15. I try to apply ideas from course readings in science activities such as lecture and discussion.
16. When I study the readings for science, I outline the material to help me organise my thoughts.
17. I make simple charts, diagrams, or tables to help me organise course material.
18. I often find myself questioning things I hear or read in science to decide if I find them convincing.
19. I treat the science material as a starting point and try to develop my own ideas about it.
20. When I become confused about something I'm reading for science, I go back and try to figure it out.
21. I ask myself questions to make sure I understand the material I have been studying in science.
22. I try to change the way I study in order to fit the science course requirements and instructor's teaching style.
23. I try to think through a topic and decide what I am supposed to learn from it rather than just reading it over when studying.
24. When studying for science I try to determine which concepts I do not understand well.
25. When I study for science, I set goals for myself in order to direct my activities in each study period.
26. Before I study new course material thoroughly, I often skim it to see how it is organised.
27. I usually study in a place where I can concentrate on my course work for science.
28. I make good use of my study time for science.
29. I attend class regularly.
30. I often find that I spend enough time in this science even when I have other activities.
31. I make sure I keep up with the weekly readings and assignments for science.
32. When I have trouble learning the material in science, I try to seek help.
33. I ask the instructor to clarify concepts I do not understand well.
34. When I cannot understand the material in science, I ask another student in this class for help.
35. I try to identify students in this class whom I can ask for help if necessary.

Tahany Alnafea (corresponding author) is currently a psychologist at Shumua Al Amal for Special Education and Rehabilitation, Dammam, Kingdom of Saudi Arabia. She recently completed her Master of Education in Cognitive Psychology and Educational Practice at Flinders University. As part of that degree program, she designed and undertook the study reported in this paper.
Email: t.m.alnafea@hotmail.com

David D. Curtis is an Associate Professor in the School of Education at Flinders University. His research traces the education pathways taken by young people as they move through and beyond schooling. He is particularly interested in the influence of family characteristics on young people's education and career pathways.
Email: david.curtis@flinders.edu.au
Web: http://www.flinders.edu.au/people/david.curtis