

Socio-economic differentials in metacognition of rural adolescents

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ABSTRACT

The present study was undertaken to study the socio-economic differentials in metacognition of rural adolescents (13-16 years). The study was carried out in rural schools of block-I, Ludhiana district. The sample comprised of 240 rural adolescents equally distributed over four grades (7th, 8th, 9th & 10th grade), two sexes and two socio-economic groups *i.e.* middle and low socio-economic group. Metacognitive skills of the subjects were assessed using a self-structured questionnaire adapted from Metacognition Inventory (Govil, 2003) and metacognitive awareness inventory (Schraw and Dennison, 1994). Socio-economic status scale developed by Meenakshi (2001) was used to ascertain the socio-economic status of the selected subjects. The impact of socio-economic status on metacognition was found to be non-significant.

INTRODUCTION

Metacognition is defined as “cognition about cognition”, or “knowing about knowing.” It can take many forms; it includes knowledge about when and how to use particular strategies for learning or for problem solving (Metcalfe and Shimamura, 1994). There are generally two components of metacognition: knowledge about cognition, and regulation of cognition (Schraw, 1998). Metacognition variously refers to the study of memory-monitoring and self-regulation, meta-reasoning, consciousness/awareness and auto-consciousness/self-awareness.

Related to effects of SES on students’ epistemological beliefs, one of Schommer’s (1990) study revealed that “the more educated parents expect their children to take more responsibilities in the home and for their own thinking and the more likely children are to develop a sophisticated system of epistemological beliefs”. Conley *et al.* (2004) found that with elementary science students, students with low SES had less sophisticated epistemological beliefs in comparison to students with average SES.

Several researchers (Sungur and Senler, 2009; Yumusak

et al., 2007) in Turkey explored students’ metacognition in the high schools level. However, there are few studies conducted to measure the relationships among elementary school students’ gender and SES with their metacognition and epistemological beliefs in all education research area. Especially, in non-western cultures, very limited research is available in this manner.

Limited exposure to oral and written language is a circumstance encountered relatively often by young children reared in low-socio-economic status (SES) households, and it is a situation that may contribute to the relatively low levels of emergent literacy skill observed in low-SES children (e.g. Feitelson and Goldstein, 1986; McCormick and Mason, 1986; Teale and Sulzby, 1986) Indeed, converging evidence has provided considerable documentation that both emergent and conventional literacy skills of children from low-SES households differ in comparison to those of their peers from middle- and upper-SES households (e.g. Bowey 1995; Dickinson and Snow, 1987; Lonigan *et al.*, 1999). Dickinson and Snow (1987) compared the performance of young children from low- and middle-SES households on a series of written language awareness tasks, finding that middle-SES children

performed significantly better than low-SES children on measures of print production, book reading concepts, and environmental print decoding. Lonigan *et al.* (1999) reported similar findings when comparing the emergent literacy performance of low-SES children in Head Start to that of children in childcare serving middle-SES families. Children in Head Start demonstrated relatively low levels of skill on measures of alphabet knowledge, lettersound knowledge, book reading concepts, and environmental print decoding.

Similarly, children's performance on measures of phonological awareness has consistently been shown to be influenced by SES (Nittrouer, 1996), with low-SES children performing poorly in comparison to their more advantaged peers. However, while Scarborough (1998) has argued that SES is a more powerful predictor of literacy outcome than measures of emergent literacy skill, oral language proficiency, home literacy experience, or nonverbal intellectual ability, a word of caution is warranted. To use membership of a specific group (such as SES status) as a means of measuring children's preparation for literacy and likely literacy outcomes is overly simplistic (Fletcher and Reese, 2005; Molfese *et al.*, 2003). To begin with, there are substantial differences amongst low-income families, and practices and outcomes will be different even within this group (Britto *et al.*, 2006).

Furthermore, the specific pathways by which low SES impacts early learning and social development is not well understood (Foster *et al.*, 2005).

In a meta-analysis of over 200 studies, Kleeck (1990) found that it was not SES that contributed most directly to reading achievement, but other family and community characteristics such as:

- Academic guidance
- Attitudes toward education
- Language used and opportunities for interaction
- Availability of reading and writing materials
- The presence or absence of literacy activities evidenced by older models
- Parents' expectations for their children
- Cultural activities

All of which may be less than optimal for children from low SES backgrounds.

The key issue, therefore, is why SES is more predictive and what can be done to ensure more positive outcomes for these families and their children? Access to literacy resources, including an adult to scaffold learning, and quality literacy interactions and experiences are clearly key issues to be addressed if we are to ensure that 'at risk' does not mean the same as destiny.

This review of the literature suggests that there needs to be more studies conducted to investigate the socio-cultural issues in relationship with ethnicity, race, socio-economic factors, rural-urban setting, home and family characteristics

etc. to better establish the relationships among these variables and cognitive and affective aspects of learning. In this study metacognition was explored in relationships with socio-economic factors influencing the selected subjects.

Against this backdrop, the study envisaged the following objectives to examine the socio-economic differentials in metacognition of rural adolescents and to ascertain the gender-wise socio-economic differentials in metacognition of rural adolescents.

METHODS

Locale of the study:

The study was conducted in Ludhiana City of Punjab state.

Selection of sample:

The sample for the present study comprised of randomly selected 240 rural adolescents studying in grade 7th, 8th, 9th and 10th from Ludhiana district.

Research instruments:

The following standardized tools were used to collect the relevant data for the study.

- Personal information sheet was used to assess the socio-personal profile of the adolescents, *viz.*, age, gender, family type, family size, number of siblings, birth order, education and occupation of the parents and monthly income of the family.

- Socio-economic status scale developed by Meenakshi (2010) was used to identify the adolescents from different socio-economic status families (low and middle). This scale consists of six different aspects, *viz.*, education, profession, monthly income, resources, surrounding and social involvement.

- Self-structured metacognitive questionnaire consisted of 67 statements out of which 23 statements were drawn from metacognition inventory (Govil 2003) and 44 from metacognitive awareness inventory (Schraw and Dennison, 1994). Thus, the self-structured metacognitive questionnaire provided a wide spectrum in-depth probe into the level of metacognitive skillfulness of the rural adolescents.

OBSERVATIONS AND ANALYSIS

The findings of the present study as well as relevant discussion have been summarized under following heads:

Socio-personal characteristics of the respondents:

Data pertaining to demographic profile of the rural adolescents from different socio-economic strata have been presented as per age, gender, birth order, number of siblings, education and occupation of parents, type and size of family

(Table 1). The information about socio- personal characteristics of the respondents presented in the Table 1 has been discussed under the following heads:

Age:

The selected adolescents were in the age group of 13-

16 years. Overall picture revealed that almost an equal number of respondents belonged to 13 years and 16 years of age (32.5% and 31.7% , respectively). However, 32.5 per cent male respondents belonged to 13 years of age, 13.3 per cent to 14 years of age, 22.5 per cent to 15 years and rest 31.7 per cent belonged to 16 years of age. Similarly, in case of female

Table 1 : Socio-personal characteristics of the respondents			
Socio-personal characteristics	Male (n=120)	Female (n=120)	Overall (n=240)
Age (years)	f	f	f
13	39 (32.50)	38 (36.67)	77 (32.08)
14	16 (13.33)	20 (15.00)	36 (15.00)
15	27 (22.50)	24 (15.83)	51 (21.25)
16	38 (31.67)	38 (32.50)	76 (31.67)
No. siblings			
Only child	4 (3.33)	3 (2.50)	7 (2.92)
One	36 (30.00)	18 (15.00)	54 (22.50)
Two	44 (36.67)	40 (33.33)	84 (35.00)
More than two	36 (30.00)	59 (49.17)	95 (39.58)
Maternal education			
Illiterate	27 (22.50)	28 (23.33)	55 (22.92)
Up to 5 th	48 (40.00)	43 (35.83)	91 (37.92)
6 th to 10 th	42 (35.00)	41 (34.17)	83 (34.58)
10 th to +2	2 (1.67)	5 (4.17)	7 (2.92)
Graduate	1 (0.83)	3 (2.50)	4 (1.67)
Postgraduate	0	0	0
Paternal education			
Illiterate	15 (12.50)	27 (22.50)	42 (17.50)
up to 5 th	34 (28.33)	31 (25.83)	65 (27.08)
6 th to 10 th	66 (55.00)	53 (44.17)	119 (49.58)
10 th to +2	3 (2.50)	6 (5.00)	9 (3.75)
Graduate	2 (1.67)	3 (2.50)	5 (2.08)
Postgraduate	0	0	0
Maternal occupation			
House wife	92 (76.67)	83 (69.16)	175 (72.92)
Business	5 (4.17)	10 (8.33)	15 (6.25)
Service	16 (13.33)	16 (13.33)	32 (13.33)
Farming	1 (0.83)	1 (0.83)	2 (0.83)
Labourer	6 (5.00)	10 (8.33)	16 (6.67)
Paternal occupation			
Non-working	2 (1.67)	0	2 (0.83)
Business	22 (18.33)	21 (17.50)	43 (17.92)
Service	26 (21.67)	22 (18.33)	48 (20.00)
Farming	17 (14.17)	14 (11.67)	31 (12.92)
Labourer	53 (44.17)	63 (52.50)	106 (48.33)
Family type			
Nuclear	70 (58.33)	76 (63.33)	146 (60.83)
Joint	50 (41.67)	44 (36.67)	94 (39.17)

Figures in parentheses indicate percentages

respondents, 36.7 per cent belonged to 13 years of age, 15 per cent to 14 years of age, 15.8 per cent to 15 years and rest 32.5 per cent belonged to 16 years of age.

No. of siblings:

Few subjects (2.92%) had no siblings whereas 22.50 per cent had one sibling, 35 per cent had two siblings and rest 39.58% had three or more than three siblings.

Maternal education:

Regarding the educational level of mothers, major proportion of the respondents' mothers was either under matric or matric (37.92% and 34.58%, respectively). However, 22.92 per cent were illiterate. Only 1.67 per cent were graduates and none was postgraduate.

Whereas, in case of male respondents, 40 per cent were educated up to 5th grade, followed by 35 per cent matriculate, 22.50 per cent illiterate, 1.67 per cent were holding senior secondary or a diploma certificate and only 0.83 per cent mothers of rural boys were graduates. However, none of the mother was postgraduate.

A similar trend was noted for the mothers of female respondents with majority (35.8%) educated up to 5th grade, followed by 34.17 per cent up to matric, 23.33 per cent were illiterate, 4.17 per cent up to +2 and rest 2.50 per cent graduate. None of the mothers was postgraduate.

Paternal education:

A similar trend as in case of mothers was observed for the fathers of male as well as female subjects with majority of fathers' educated up to matric (49.58%) followed by 27.08 per cent up to 5th, 17.50 per cent illiterate, 3.75 per cent up to +2, 2.08 per cent graduate and none as post graduate.

However, it was noted that major proportion (55%) fathers of male respondents were matriculates, followed by 28.3 per cent up to 5th standard, 12.5 per cent were illiterate, 2.5 per cent were +2 or diploma and only 1.67 per cent were graduate. None of the fathers was postgraduate.

Whereas, 44.17 per cent fathers of female respondents were matriculate, followed by 25.8 per cent were educated up to 5th standard, 22.5 per cent were illiterate, 5 per cent were +2 or diploma and only 2.5 per cent fathers had a graduate degree. None of the father was postgraduate.

Maternal occupation:

Regarding occupation of mother, it was interesting to note that majority (72.92%) of the mothers irrespective of male and female respondents were housewives and the percentage was higher in case of mothers of male respondents (76.67%) as compared to the mothers of female respondents (69.16%).

Only 13.3 per cent mothers of male respondents were

in service and this percentage was comparable in case of mothers of female respondents (13.3%). However, 4.2 per cent mothers of male respondents and 8.3 per cent of female respondents were in business. 5 per cent of mothers were labourer in case of boys where as in case of female, 8.3 per cent of mothers were labourer and only 0.83 per cent of mothers were in farming.

Paternal occupation:

Major proportion (44.17%) of fathers of the adolescent males were labourer, where as 21.67% were engaged in private or Government service, followed by business (18.33%), some of them (14.17%) were involved in farming, 1.67 per cent were non-working.

Similar trend was observed for the fathers of female respondents. Majority (52.50%) of them were labourer, 18.33 per cent were in service, 17.5 per cent in business, and 11.67 per cent in farming.

Family type:

The data revealed that major proportion (60.83%) of rural adolescents belonged to nuclear families and rest (39.17%) belonged to joint families. However, 58.33 per cent of male respondents belonged to nuclear families and rest 41.67 per cent were from joint families. Whereas 63.33% of female respondents belonged to nuclear family and rest 36.67% were from joint families.

Thus, major proportions of the respondents were either 13 or 16 years old and rest was 14 or 15 years old. Major proportion of the respondents had two or more than two siblings. In case of education of parents, major proportion of mothers and fathers were educated up to matric level and none was post graduate and few were graduates. Most of the mothers were housewife and fathers were engaged in farming. The next most preferred occupation was daily labourer. Majority of respondents had nuclear family.

Socio-economic differentials in metacognition of rural adolescents:

Table 2 presents the socio-economic differentials in metacognition of rural adolescents.

Data presented in Table 2 depict the overall picture of the socio-economic differentials irrespective of sex. The results revealed that an equal number of (34.17%) respondents from middle socio-economic group had high level and low level of metacognition followed by 31.67 per cent with an average level of metacognition.

The picture was found to be slightly better for subjects from the low socio-economic group with 36.67 per cent having high level of metacognition followed by 32.50 per cent in average level of metacognition and rest 30.83 per cent with low level of metacognition.

This indicates that subjects from LSEG had better metacognitive skills as compared to their MSEG counterparts. Also, a slightly more number that is 34.17 per cent from MSEG were found to have low metacognition. However, the differences were found to be statistically non-significant.

Socio-economic differentials are important impacting factors for the development of many skills among the growing individual. The limited resources and the non-stimulating environments are known to have detrimental effects on the overall development of children. Therefore, it becomes imperative to explore the relationship of socio-economic differentials and the metacognitive skillfulness among adolescents, so that timely measures may be taken to ensure the development of important skills of metacognition for success in learning.

Genderwise socio-economic differences in metacognition:

Table 3 presents the socio-economic differences in metacognition of rural boys. The analysis of the presented data brings to light that more number of subjects from MSEG, were in high (23.33%) and average (43.33%) level of metacognition where as in case of subjects from LSEG more number of subjects (38.33%) had low level of metacognition.

However, the differences in the metacognitive skills of boys belonging to low and middle socio economic status were found to be statistically non-significant.

Table 4 presents the socio- economic differences in

metacognition of rural girls. The data revealed that majority of subjects from both the socio-economic strata had high metacognition. Further, it was observed that 45 per cent of girls from MSEG had high metacognition followed by 35 per cent respondents with low metacognition and rest 20 per cent with average metacognition. In case of subjects from low socio-economic status, 53.33 per cent girls had high metacognition and an equal number of girls (23.33%) were in average and low level of metacognition. However, these differences were found to be statistically non-significant across two socio-economic strata at all the three levels of metacognition.

Socio-economically advantaged parents often have more success in preparing their children for school, because they have access to a wide range of resources to promote and support their development. On the contrary, when basic necessities are lacking, parents' major priority is survival, and usually there is no time, energy or knowledge to foster children's development and school readiness. Low socio-economic status students lack the necessary cultural products that enhance learning, and have a poor metacognitive ability, which is reflected primarily in language learning and school adaptation (Bernstein and Henderson, 1969; Bourdieu and Passeron, 1990).

Conclusion:

However, the results of the study undertaken revealed no significant differences across two socio-economic strata

Levels of metacognition (mean score)	MSEG ¹ (n=120)		LSEG ² (n=120)		Z-value
	(f)	(%)	(f)	(%)	
High (>3.46)	41	34.17	44	36.67	0.41
Average (3.46-3.10)	38	31.67	39	32.50	0.14
Low (<3.10)	41	34.17	37	30.83	0.55
	1-Middle socio-economic group		2-Low socio-economic group		

Levels of metacognition (mean score)	MSEG ¹ (n=60)		LSEG ² (n=60)		Z-value
	(f)	(%)	(f)	(%)	
High (>3.46)	14	23.33	12	20.00	0.44
Average (3.46-3.10)	26	43.33	25	41.67	0.18
Low (<3.10)	20	33.33	23	38.33	0.57
	1-Middle socio-economic group		2-Low socio-economic group		

Levels of metacognition (mean score)	MSEG ¹ (n=60)		LSEG ² (n=60)		Z-value
	(f)	(%)	(f)	(%)	
High (>3.46)	27	45.00	32	53.33	0.91
Average (3.46-3.10)	12	20.00	14	23.33	0.44
Low (<3.10)	21	35.00	14	23.33	1.41
	1-Middle socio-economic group		2-Low socio-economic group		

and different levels of metacognition among rural adolescents. It indicates that metacognition has other impacting factors apart from SES which segregated the children across various levels of metacognition and learning. Therefore, the other psychosocial determinants of metacognition need to be probed to establish the causative factors for the differential metacognitive abilities among children.

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