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Relationships Among Teachers’ Classroom Orientations, Strategy-based Instruction & Students’ Goal Orientations, Self-Regulated Learning and Achievement

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Introduction
Motivating students to become independent, self-directed learners has been a cause for concern among educators. Yet studies on student cognition tend to focus on enhancing thinking and problem-solving without adequately addressing the motivational and classroom factors which foster effort expenditure and persistence in student learning (Gott, 1990). In recent years, self-regulated learning is considered critical for effective learning and scholastic achievement (Brown, 1986; Pintrich & De Groot, 1990). Indeed, much of this research is the notion that students experiencing difficulties in learning can actively participate in and self-regulate their own learning to the extent that they can function as autonomously as their normal achieving peers.

Students’ knowledge and usage of strategies by itself is not sufficient to promote student achievement. Goal theory researchers suggest that the kind of goals that learners adopt can guide their behaviour, cognition and learning. Students who adopt task goals are focused on learning while those who adopt an ego goal are focused on obtaining good grades, comparing and competing with others, often while expending less effort. In contrast, students with work avoidance goals attempt to do the least amount of school work necessary to “get by” and try to avoid school work as much as possible.

There has been much literature that shows that task orientation outcomes in more cognitive engagement, including use of “deeper” learning strategies (Gottah & Golen, 1991). The shift in orientation toward a goal is a progression of function of individual differences as to be caused by situational constraints e.g. teachers’ classroom goal orientation (Ames, 1992). Under situational constraints, students have the incentive to extend effort, regardless of whether the orientation focuses on increasing knowledge or skill (task orientation), demonstrating ability (ego orientation), or completing a task with minimum effort (work avoidance orientation). It is under failure situations that these goal orientations produce vastly different responses. Task-oriented students would respond to impending failure by remaining task-focused, believing that effort and strategy, rather than ability, is the key to success (Dweck & Leggert, 1988). In contrast, ego-oriented students would choose simpler tasks or irrelevant strategies or adopt work avoidance orientation to preserve their self-image (Dweck & Leggert, 1988). Basically, work avoidance orientation is ineffective when enrolling task that students do not perceive that they are in control of their learning (Elliot & Leggert, 1988). In contrast to the task orientation, the adoption of more ego orientation or work avoidance orientation may be counterproductive to learning.

According to Dweck (1989), classrooms in which students perceive improving competence and learning as the goal have fewer students who show negative motivational patterns than do classrooms in which students have goals of comparing and competing with their peers. If appropriate goal orientations are provided for students early experiences, they are likely to try hard to achieve and contribute their success to the correct factor, being more sensitive to growing in the face of difficulties, maximizing their self-worth and self-esteem (Rotkowski, et al., 1990). Ames (1992) added that self-reports of teachers to change both their instructional strategies and classroom orientations so that their classroom practices can influence students’ motivation and cognition. Ames (1992) suggests that if students are taught to focus on strategies rather than the product, they are more likely to own the outcome and feel responsible for the outcome. Thus, ultimately, this ownership of personal control of their successful outcomes will be an integral part of empowering students so that they can legimintly expect to succeed later.

Finally, research on student perceptions of classroom instruction (e.g. Knight, 1992) revealed that teachers’ classroom instruction affected students’ subsequent strategy use. According to Ellis (1993), teachers’ knowledge of strategies and the kind of strategy-based instruction provided are likely to lead to a more note learning procedure or a more process oriented learning environment. Students are encouraged to self-regulate their learning. This will assist students not only to exercise control over when, how and when to use their strategies but also to assist them to remain focused on the goals of activity as they persist and expend their effort to achieve their goals.

If students’ motivation and self-regulated learning are to assist us in understanding individual differences, it is critical to find out if students’ goal orientations and knowledge and use of strategies differ for different achievement levels. Further, with the recent focus on the close relationship between teachers’ classroom practices and students’ motivation, cognition and learning, the relationship among the constructs needs to be examined. To summarize, this study aims to 1) examine differences in the goal orientations and knowledge and usage of self-regulated learning strategies among students as well as teachers’ classroom goal orientations and strategy-based instruction in the three streams and 2) examine the relationship among teachers’ classroom orientations and strategy-based instruction and students’ goal orientations, knowledge and usage of self-regulated learning and achievement in the three streams. To augment the findings of the different teacher effects and to provide further insights into teachers’ classroom practices, a qualitative study involving teacher interviews was also carried out. However, in this report, only the quantitative findings and implications for instruction in the three streams will be drawn.

Method

Subjects
The study consisted of 695 Primary Six students and 311 teacher in 53 Singaporean schools. The sample student consisted of three ability streams: EM (high-achieving), EM (average) and EM (low-achieving).

Of the 311 teachers who participated in the study, 13 taught EM classes, 194 taught EM classes and 85 taught EM classes. The age range of the teachers was from 20 to above 50 with 68% being female and 32% male. The majority of the teachers were non-teacher holders the Certificate in Education (three years of pre-service primary teacher training). A total of 75% of these teachers had more than ten years of teaching experience and like all primary school teachers are normally required to teach most subjects in the class.

Assessment Instruments

The Personal Goals Scale (adapted from Nicholls, Patachick and Nelson, 1995) was used to assess students’ task, goal and work avoidance orientations in school structures whilst The Self-Regulated Learning Strategies scale (Ysseldt & Chen, 1998) was used to assess students’ knowledge and usage of self-regulated learning strategies. The measure of academic achievement was obtained from the Primary School Leaving Examination (PSLE) results provided by the school. The teacher survey questions assessing teachers’ classroom task and ego orientations and strategy-based instruction was developed by the researcher. The reliability measures of these scales ranged between 0.785 to 0.926.

Data Analysis

One factor eigenvalue models were generated using PRREL and LISREL to determine the validity and reliability of the instrument. This formation of composite variables provide a more realistic consideration of the data and assess in overcomes the problem associated with large numbers of indicator variables in the data for use in Multivariate (multi- level) analysis (Holmes-Smith & Rowe, 1994).

Specific MANCOVAS were used for analyzing the differences in the student variables and the teacher variables in the three streams. The relationships among the teacher and student variables on achievement was examined using multilevel analysis to cater for the hierarchical structure of the data. The analyses examined two-level hierarchy with the student variables at Level 1 and the teacher variable at Level 2. The advantages of multilevel over single level linear modelling stem from the former’s more realistic portrayal of the effects of variables. A multilevel model incorporates the fact that individuals within normally occurring groups share common features: they are not the completely independent variables assumed in ordinary linear modelling” (Pewor, Rudbys & Goldstein, 1991).

The analytical advantage for using MIM is the potential to avoid analytical problems arising from data clustering such as aggregation bias, heterogeneity of regression and related problems of model misspecification.

Results

Differences in students’ goal orientations and knowledge and usage of self-regulated learning in the three streams. The three streams represent differences in students’ goal orientations and less on work avoidance tendencies. EM1 students were more inclined to work avoidance as compared to EM2 and EM3. This may be related to the highly competitive academic environment in Singapore. The findings of higher work avoidance goal orientation scores for EM3 students are not surprising and fit well with the established literature of work avoidance (e.g. Unland 1997). In the case of the EM3 students, their constant poor academic results and the streaming into EM3 classes may have further resulted in these students believing that they lack control over learning. Furthermore, with an environment that stresses high achievement, EM3 students are likely to opt out on tasks that they perceive difficult so as to avoid further failure and shame. EM3 students, especially the boys’, low knowledge and usage of strategies may further suggest that boys have a more fragile ego and who are more affected when they do not perform as expected. Thus, they are more likely to resort to less effective strategies in performing their school work especially when they also perceive that the classroom goal is more achievement-oriented.

In the context of the three streams, it is not surprising that the level of students’ task goal orientation is more prominent in EM1 classes as compared to EM2 and EM3 more frequently practised by students who are more achievement oriented. That is, statistically significant differences were found in classroom goal orientations of the three streams. In Singapore, where achievement is highly valued, it may not be surprising if teachers motivate their students through competitive means. Only EM1 classes were found to significantly differ from EM3 classes for only classroom task goal orientation.

Strategy-based instruction of teacher differ in quantity and quality across the three streams. The results of the analysis provided more strategy-based instruction as compared to EM2 teachers, whereas EM2 teachers reported providing more strategy-based instruction as compared to EM1. From the results of the analysis, EM3 teachers were less likely to provide explicit strategy based instruction, or expose their students to the effectiveness of instruction over another or brainstorming the possible usage of these strategies.

Relationships among teachers’/students variables and achievement

The MIM analyses showed that schools accounted for more than half of the variance in PSLE achievement in both EM1 and EM3 streams. In the case of EM1 stream, between school variation in achievement depends on students’ task orientation and usage of self-regulated learning in schools. The significant covariances from the random part of the model showed that in high-achieving EM1 schools, EM1 students who are both task and ego-oriented are likely to make a difference in their school mean achievement whereas in low achieving EM1 schools, EM1 students who are more preoccupied to knowledge and usage of strategies will make a difference in their school mean achievement.

From the MIM analyses for the EM2 stream, variation between classes accounted for nearly two-thirds of the variance in PSLE achievement. In the case of the EM2 stream, the between school variation in achievement is related to students’ ego-orientations. The significant covariances from the random part of the model showed that in high-achieving EM2 classes, task goal is likely to make a difference in the class mean achievement. Furthermore, knowledge of self-regulated learning was found to make a difference in enhancing usage of self-regulated learning whereas, work avoidance orientation is likely to make a difference in the knowledge of self-regulated learning of EM2 classes. In the case of low-achieving EM2 classes,
knowledge of self-regulated learning will make a difference in EM2's mean class achievement and task goal orientation will make a difference in their knowledge of self-regulated learning.

For EM2 classes, between class variation on responses USAGE, KNOWLEDGE, STTG and SSEG were also found. Much within class difference was also found at the students’ levels. The interaction of classes to enhance task goal orientations were not found in EM2 similar within class differences were also found at the students’ level although to a lesser degree than EM2.

Regardless of stream, students who were task-oriented were more predisposed to greater knowledge and usage of strategies, whereas work avoidance orientation had a negative effect on both task goal orientations and self-regulated learning (Figures 1-3). In the case of EM2 stream, task-oriented students were also more likely to do well in their achievement. EM1 and EM2 students who have work avoidance tendencies were also less likely to use self-regulated learning while in EM2 and EM3 streams, students who were work avoidance oriented were also less likely to achieve in their studies.

In both EM1 and EM2 streams, the more ego-oriented the students, the more likely they would perform well academically indicating that for the majority of students in the average and above average achievement range, ego goal orientation is likely to have a positive direct influence on their achievement. Indeed, for the EM2 students, the better co-efficient for ego goal orientation to PSEL is next to highest for the model. Considering that all streams were found also to possess task goal orientations besides ego goal orientation, it is possible that both task and ego goal orientations and yet be motivated to achieve academically as task goal orientation focuses on task mastery whereas, ego goal orientations remind students of their long term consequences of these actions (Wentzel, 1991). Singaporean being a meritocratic society with the teachers, parents and students emphasizing the importance of high achievement if students want to ensure that they have a bright future, Singaporean students may be oriented in pursuing these goals. However, much of the literature on goal orientations demonstrates that students tend to pursue other than ego goal orientations to predict achievement (Abdull & Lipschutz, 1998). Could it be that the cultural milieu of Singapore, with its emphasis on achievement, competition and pursuit for excellence has played a role in the findings presented here? That is, in the local context, this term “competition” tends to stress the process that will help one to better understand oneself for the sake of self-improvement rather than “competition” that stresses product and is seen as a means to compete and compare to show one’s superiority or the satisfaction of outdoing someone merely for ego sake.

Irrespective of streams, students who reported knowledge of self-regulated learning were also reporting having greater predisposition to use self-regulated learning. In the case of EM3 students, their knowledge of self-regulated learning has also a positive influence on their achievement, but not those of EM2 students. Knowledge and usage of self-regulated learning mediates between task goal orientations and achievement for EM1 and EM3 students, but there is no significant link between usage of self-regulated learning and achievement for EM2 students. Usage of self-regulated learning in EM3 classes was negatively related to achievement unlike the positive link to achievement in the case of EM1 students.

What might be the possible reasons for these relationships across streams? One contributing factor could be that the EM1 students have greater knowledge and usage of strategies compared to the other two streams allied to their significant low work avoidance tendencies. Another not necessarily mutually exclusive factor could be the metacognitive maturity which is only evident in older and more cognitively mature students. The lack of relationship between EM2 students usage of strategies and achievement may be due to a lack of metacognitive maturity. Furthermore, the lack of application of opportunities in class (as shown in the teacher interview data) may prevent transfer and generalization. These limitations may not capture the use of self-regulated learning strategies for these particular students. Lastly, EM2 teachers may fail to teach cognitive self-management strategies to their students to ensure self-regulation. In EM3 students, the negative impact of usage of strategies on EM3 students’ achievement could probably be linked to the mind-set used to perform task goal orientations and not necessarily related to the examination to allow for application. Then again, even if the strategies were useful for the EM3 students, the impact of the work avoidance goal orientations may be too overbearing, thus preventing them from applying both task and ego goal orientation strategies that they have learned. Finally, the lack of application opportunities in class may prevent transfer and generalization of EM3 students learning.

Teachers’ classroom task goal orientation has different effects for different streams. Teachers’ classroom task goal orientations has a positive influence on the ego goal orientations of EM1 students, the task goal orientations of EM1 and the achievement of EM2 students. In the case of teachers’ classroom ego goal orientations, it has a positive effect on EM1 students’ achievement and negative effect on their knowledge of self-regulated learning. Teachers’ classroom ego goal orientations were not facilitative for EM1 and EM3 streams. However, teachers’ ego goal orientation was found conducive for enhancing EM1 students achievement but not EM3 students’ knowledge of strategies. What is apparent is that the classroom goal orientation of teachers influenced different student variables in the three streams. The relationship between teachers’ and students’ task goal orientations is evident at EM3 and through knowledge positively influenced achievement. This is consistent with similar work examining task goal orientation (e.g. Young & Utumi, 1993). However, task goal orientation at EM2 seems not to influence students’ task goal orientations but achievement directly. At this level, it appears that the classroom which is task-oriented is conducive to better learning outcomes.

For the EM3 classes, the direct effect of the classroom ego goal orientation on achievement is not consistent with previous research findings nor teacher classroom goal orientation task goal orientations on students’ ego goal orientation (rather than task goal orientations as in EM3’s case). It may be that the very nature of being the reality of such a culture reinforces the competitive nature of the society (reflects what the culture wants e.g. Hsu & Hsieh, 1996).

Teachers’ strategy-based instruction tends to be positively related to EM2 students’ knowledge and usage of self-regulated learning and EM3 students’ achievement but negatively related to EM1 students’ ego goal orientations. Perhaps what is most interesting is the negative effect of teachers’ reported strategy-based instruction at EM1 level. In contrast to the somewhat inconclusive indiscernible strategy-based instruction to EM2 and EM3 streams, the negative impact of strategy-based instruction on EM3 students’ ego goal orientations could probably be due to two reasons. First, students may have reached automaticity in their self-regulated learning strategies and perceived that they did not need their teachers’ strategy-based instruction. Second, the kind of strategy-based instruction of the EM3 teachers may be seen as redundant to EM3 students who have already mastered these strategies.

In the present study, students’ goals were only weakly correlated with achievement, thus, caution should be taken in interpreting these weak relationships which may suggest that goals are not important in these stream reasons. First, the weak relationship between goals and achievement may indicate that something undetectable is going on in the three streams in the schools. Why would a desire to learn, take on challenging work and improve skills (task goal) not be more strongly related to achievement? Why are ego and work avoidance goals not negatively related to achievement? It may be a reflection of the school task and the evaluation procedure which do not reward tackling challenge and placing mastery above achieving high marks. This may be especially reflected in EM1 and EM2 classes where students ego goals are more strongly related to achievement than their task goals. Second, it may be that goals affect motivation through their relationship with other variables rather than directly. Finally, in the present study students’ knowledge and usage of self-regulated learning strategies were the mediating variables between task goal and achievement for EM1 and EM3 students. Third, teachers’ classroom goal orientations and strategy-based instruction may further weaken the direct link between students’ personal goals and achievement. Fourth, it may reflect the Asian culture and philosophy where competitiveness is perceived as a learning opportunity to better understand our strengths and weaknesses, and thereby, develop on our sets of weaknesses.

Implications

These findings indicated that there are specific classroom implications for the three different streams. An EM1 classroom that prepares both task and ego goal orientations will enhance both students’ knowledge and usage of strategies and achievement. In the case of EM2 classes, students are both high task and ego oriented showed most positive achievement profile. Thus, although ego goal orientations have a positive direct influence on achievement, classroom ego goal orientation should not rated classroom goal orientation orientations as EM2 students have also shown work avoidance tendencies. In the case of EM3 stream, more classroom task goal orientations need to be provided which may not only perpetuate students’ knowledge and usage of strategies and reduce their work avoidance goal orientations.

The negative impact of strategy-based instruction on EM3 students’ ego goal orientations may suggest the need for a different set of strategies for enhancing EM1 students. In the case of EM3 students, strategies may need to be more explicit and elaborate to include cognitive self-management strategies that ensure that students’ knowledge and usage of strategies will predict achievement. The lack of students’ knowledge and usage of strategies and achievement may suggest the need to provide more problem-solving activities that encourage reflective thinking as well as opportunities for transfer and generalization that provide students with the opportunities to relate to real-life situations. The negative impact of usage on strategies on EM3 students’ achievement may suggest the need to provide not only explicit strategy-based instruction with scaffolded instruction but a good selection of appropriate strategies that will enhance students’ achievement. Sufficient application and transfer and guidance strategies that will link opportunities for success and high task interest must also be included. The strategies used may also need to be more focused on reviewing and reviewing exam papers and memory strategies for recall and retention.

References


