CHAPTER 5: CONCLUSION

This chapter summarizes the findings from the study, and offers several conclusions. It also describes limitations found in the study and recommends some areas awaiting further investigation.

5.1. Conclusions

The ILS survey showed a majority of active (80.2%), sensor (83.1%), visual (81.7%), and sequential (81.7%) learning style of 71 participants who took ILS. Using Felder & Soloman's (2001) indicator of preference intensity, the number of moderate and strong learning style (LS) was highest for visual (56.3%), followed with active (40.8%), sensing (35.2%), and sequential (32.4%). These results correspond to the assumption initially made by Felder & Silverman (1998), that many or most engineering students are visual, sensing, active, and sequential. Similar results have been confirmed from LS studies in Denmark (Kolmos & Holgaard, 2004), Greek (Platsidou & Metallidou, 2009), China (Wang, 2007), Uni Arab Emirates and United States (Zualkernan, Allert, & Qadah, 2005), showing that engineering students are distinctly characterized by visual, sensing, and active LS, with less contrast in SEQ-GLO preference.

As much as 18.5% of participants showed weak LS compatibility with the selected groups of reading activities in three interventions. One student failed to self-select to any compatible group, and six students made only one compatible

self-selection from the available twelve groups. On the other end, some 31.5% of participants exhibited strong compatibility. Four students consistently self-selected reading activities groups which turned out to be compatible with their LS. In the middle, some 50% of the participants chose reading activities which showed moderate compatibility with their LS.

This evaluative case-study with simple statistics also revealed that the self-selection allowed students to engage in doing reading activities, regardless of the degree of their compatibility. Students with weak compatible self-selection (18.5%) were intensely engaged in the cognitive areas with less or no affective engagement. Meanwhile, students who made strong compatible self-selection (31.5%) were more engaged on the affective and behavioral aspects but with greater risk of disaffection due to unmet expectations from the reading activities they had chosen. Most students, including the 50% of students who made moderately compatible self-selection, were more engaged on the cognitive area especially when they made intentional self-selection of activities that mismatched, either partially or fully, with their LS. Readiness to self-select reading activities that were different from their usual expectation was a key factor in engaging students regardless of their LS.

Looking into the themes from self-reports, all criteria of affective, behavioral, and cognitive responses (A-B-C responses) were identified. From the total 486 entry responses extracted from 54 students, six major themes were: interest, imagination, challenge, relatedness, perceived compatibility, and external regulation. If responses were classified based on criteria of engagement, it turned

out that cognitive engagement was the mostly reported, i.e. 40.3% from all responses after doing differentiated reading activities. Affective engagement, comprising 39.7 % of responses, was only slightly less than cognitive engagement reported. Behavioral engagement was the third at 14.0%. Disaffection, as the opposite of engagement, was acknowledged in about 6% of total responses. Some of the above themes were also revealed in other studies. To name a few were Bruckmann's study of self-selected reading among primary schoolers (2009) and similar study by Johnson & Blair's (2003). Those themes were also pertinent to Deci & Ryan's seminal work on intrinsic motivation (1985), Solarz's study on affective-behavioral-cognitive changes on meditation (2004), and Unver's study on self efficacy in EFL classroom (2004).

In brief, it can be concluded that when choices are provided, students can feel challenged and generate their own readiness level to self-select their area of curiosity. However, satisfying curiosity is not always affordable in a one-size-fits-all class. Differentiated reading activities facilitates students' curiosity, and thus nurtures their enthusiasm for learning. Differentiated instruction can promote student engagement, by offering self-selection. With regard to LS, self-selection allows students to improve their non-preferred styles, also called LS-stretching, when they are ready.

Three suggestions can be made from the results of this study. First is that to facilitate engagement in all students, self-selection to reading activities cannot be used solely or in isolation from other instructional strategies. The active role of teacher is necessary to support and fill the gap where self-selection cannot catch

the attention of some students, particularly those who are less self-regulated or not very much intrinsically motivated. Explicit teaching is necessary to support such students, most likely also sustained with more personalized instruction. Secondly, it is very important for teachers to allow students have some degree of freedom to self-select, either the type of activity, the materials, the pace, or the group member. The last, the findings from this study also suggest that matching learning style with teaching style, or matching learning style with the 'style' or nature of an activity is not necessarily imperative. Rather, readiness is a more essential enabler to allow students experience engagement in selecting and doing reading activities.

5.2. Limitation of the Study

This study has at least two limitations due to its design. First, this study was conducted in a limited time span, with only three opportunities to self-select. Therefore, some aspect of LS self-selection and compatibility have not yet been confirmed, especially regarding the auxiliary dimensions of active-reflective, visual-verbal, and global-sequential. Secondly, since the number of subjects recruited for this study was limited, with return rate of 56.4%, there was a possibility that students with incomplete responses could have elicit supportive or contradictive results from those obtained in this study.

5.3. Ideas for Future Research

There are at least two ideas for future research that can be derived from this study.

First is the LS compatibility of raters that, as found in the inter-rater

benchmarking in this study, may influence the degree of inter-rater agreement. It is worth exploring and explaining whether inter-raters with different LS would process information differently and therefore result in different ratings on the students. Secondly, research can also be conducted with regard to types of reading materials, activities, or test items that potentially favor learners with a certain LS. Such a study could explore how reading material, activities, or assessments can be designed to stretch students' LS and empower them for more flexible and meaningful learning.