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### Stimulating learner autonomy in English language education : a curriculum innovation study in a Vietnamese context

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## CHAPTER 9

### THE EFFECTS OF THE INTENDED AND THE ADAPTED CURRICULUM

Chapter 7 and chapter 8 respectively described the implementation of the intended curriculum in experiment 1 and that of the task-based component in the adapted curriculum in experiment 2. The chapters showed that choice and interactions were implemented as intended. We now know that in both experiments, the intended curriculum and the task-based component of the adapted curriculum were implemented as intended. As a result, we might assess whether these two curricula were successful in improving students' self-regulation, intrinsic motivation and attitude to autonomous learning. In this chapter, based on the participants' scores on the pre-and post-tests, the effects of each of the two curricula on students' self-regulation, intrinsic motivation and attitudes to autonomous language learning are presented. To explore the effect of learner characteristics on the effect of the curriculum, we present the relation between learner characteristics and the effects of the two curricula on self-regulation, intrinsic motivation, attitudes to autonomous learning and language achievement.

#### 1. RESEARCH QUESTIONS

One common quality of autonomous and communicatively competent language learners revealed in chapter 3 and chapter 4 of this book is *strategic competence*, the ability to determine communicative goals, assess communicative resources, plan communication and execute this communication (Bachman, 1990). Therefore, strategic competence manifests the learners' ability to self-regulate their learning. *Choice* provides them with the opportunities to exercise their self-regulation. Therefore, with the provision of choice, it might be expected that the learners' self-regulation will improve. The improvement of self-regulation might be strengthened by the level of motivation. Choice might stimulate intrinsic motivation because learners experience ownership of their learning process. The more ownership, the more autonomous. In other words, the curriculum providing learners with choice aims to enhance learners' self-regulation, intrinsic motivation and attitudes to autonomous learning. In addition to choice, authentic interactions in the target language (e.g., while learners negotiate with each other about the choices of what and how to do a learning task) facilitate the development of learners' communicative competence. Little (2000a) maintained that the more autonomous language learners are, the more competent they become; therefore, concerning the outcomes of the two curricula, this chapter aims to answer one main question for each of the curricula implemented in experiment 1 and in experiment 2:

*Were students' levels of self-regulation, intrinsic motivation and attitudes to autonomous learning improved?*

To gain insight into the possibility that different students profit to a different extent from the two curricula, we will explore the relation between the effects of the curriculum and learner characteristics (i.e., students' initial level of self-regulation, intrinsic motivation, attitudes to autonomous learning and English). This explorative question is answered in both curricula,

*Taking learner characteristics into consideration, which curriculum showed to contribute to the ultimate development of self-regulation, intrinsic motivation, attitudes to autonomous learning and language achievement?*

## 2. METHOD

### 2.1 Participants

Participants in experiment 1 (cohort 1) and experiment 2 (cohort 2) are all first-year students of the academic year 2002-2003 and 2003-2004 respectively, majoring in Teaching English as a Foreign Language (TEFL) at Cantho University. Section 3.2 in chapter 6 of this book described how the participants were admitted into the program.

There were 60 participants in experiment 1. One participant won the national prize for a contest in English, so she was unconditionally accepted into the program. The other 59 participants were short-listed based on their performance in the national entrance examination into the program in the academic year 2002-2003. The average age of the participants is 18.8 ( $SD = 2.27$ ). There were 44 females and 16 males.

There were 40 participants in experiment 2. One participant won the national prize for a contest in English. She was unconditionally enrolled into the program. The other 39 participants were admitted into the program based on their performance in the national entrance examination in the academic year 2003-2004. Participants' average age is 18.5 ( $SD = 0.75$ ). There were 30 females and 10 males. Table 9.1 reports the descriptive statistics of the results of the three subjects taken by participants in study 1 and study 2 for the entrance examination.

To highlight the importance of English as an examination subject, the final mark in English is multiplied by two. The final mark of English once doubled, plus the mark for mathematics and that for Vietnamese literature is the determinant for admission to the program or not. The University has a priority policy towards candidates who are considered disadvantaged, coming from rural areas. These candidates will get one mark extra as a "priority mark". In the academic year 2002-2003 (experiment 1), there were about 550 candidates who took the examination for admission to the EFL teaching program, but just 60 candidates were short-listed for admission to the program. In the academic year 2003-2004 (experiment 2), there were about 710 candidates who took the admission exam for the program, but only 40 candidates were short-listed into the program.

Table 9.1. Descriptive statistics of the results of the three examination subjects in the entrance examination (2 cohorts)

Study	Examination subjects	Range*	M (SD)
1 (N = 59)	Vietnamese Literature	2.0-9.0	5.02 (1.72)
	Mathematics	3.0-9.0	5.54 (1.22)
	English	3.5-7.5	5.34 (1.05)
2 (N = 39)	Vietnamese Literature	3.5-8.0	5.64 (1.08)
	Mathematics	2.5-8.5	5.82 (1.39)
	English	2.0-9.5	5.01 (1.82)

\*The score is on the scale of 0 as minimum and 10 as maximum.

The results of the examination in English show that even candidates who got low scores in English have been admitted into the program. For participants from cohort 1, 3 candidates scored 3.5, 5 candidates 4, and 12 candidates a 4.5, making 20% score lower than 5. The admission mean score in English is just average ( $M = 5.34$ ). For participants from cohort 2, for English 2 candidates scored 2.0, 2 candidates scored 2.5, 1 scored 3.0, 5 scored 3.5, 4 scored 4 and 4 scored 4.5, making 46.2 % of candidates score lower than 5. The admission mean score in English is also just average ( $M = 5.01$ ). We ran the GLM Multivariate Analysis test to check for the initial difference between the two studies in English, self-regulation, intrinsic motivation, and attitudes to autonomous learning. An initial difference in English, self-regulation, intrinsic motivation, and attitudes to autonomous learning between the studies was observed ( $F(4, 93) = 3.33, p = .013$ ). The results from the GLM Univariate Analysis tests revealed that (1) no initial difference in English, self-regulation, and attitudes to autonomous learning between the two studies was observed ( $F(1, 97) = 1.27, p = .26$ ;  $F(1, 97) = 2.88, p = .093$ ;  $F(1, 97) = 1.33, p = .25$  respectively), and that (2) an initial difference between the two cohorts was observed in intrinsic motivation ( $F(1, 97) = 6.62, p = .012$ ). Cohort 1 ( $M = 5.79, SD = .50$ ) scored higher than cohort 2 ( $M = 5.52, SD = .63$ ).

As proposed by the English Department, the University placed participants into groups, following the principle of "first come, first served". Those who sent their application form to register for the program first were placed in the first group and those later in subsequent groups. Participants in cohort 1 were placed into 4 groups. Group 1 consists of 12 students; group 2, 17 students; group 3, 19 students and group 4, 14 students. Participants in study 2 were placed into 3 groups, consisting of 15 students, 14 students and 11 students respectively.

## 2.2 Procedure

One week before each of the two curricula was to begin<sup>1</sup>, the pre-tests to measure students' self-regulation, intrinsic motivation and attitudes to autonomous learning were administered. The researcher explained to the participants that they had an hour and a half to complete all three questionnaires. Students who sat next to each other did not get the same type of questionnaire for one turn to fill in. When a student finished completing one questionnaire, she/he proceeded to the next one until all were completed. One week after the semester was finished, the post-tests to measure self-regulation, intrinsic motivation and attitudes to autonomous learning were taken, following the same procedure for the pre-tests. Table 9.2 lists the procedure of the two experiments.

*Table 9.2. Procedure of the two experiments, both in first semester (15 weeks)*

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*Pre-tests:*

Pre-tests on self-regulation, intrinsic motivation and attitudes to learner autonomy (one week before the beginning of the implementation of the two curricula).

*The intended curriculum implemented (academic year 2002-2003)*

*The adapted curriculum implemented (academic year 2003-2004)*

*Post-tests:*

Post-tests on self-regulation, intrinsic motivation and attitudes to learner autonomy (one week after the end of the implementation of the two curricula)

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## 3. RESULTS

### 3.1 Analyses

The data from the pre-tests and post-tests on self-regulation, intrinsic motivation and attitudes to autonomous learning from the participants of the two cohorts were subjected to SPSS to measure their gains in self-regulation, intrinsic motivation and attitudes to autonomous learning respectively. We ran the GLM Repeated Measures tests to check for time effect, the Pearson Correlation tests for the correlation between participants' scores on the pre- and post-tests, and the GLM tests for group effects on self-regulation, intrinsic motivation and attitudes to autonomous learning.

### 3.2 Self-regulation

The focus of the self-regulation questionnaire (15 items, seven sub-scales) is on the control and self-regulation aspect of meta-cognition. *Planning, monitoring and regu-*

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<sup>1</sup> For cohort 1: semester 1, academic year 2002-2003 and for cohort 2: semester 1, academic year 2003-2004

lating are the three general processes that make up meta-cognitive self-regulatory activities (Pintrich et al., 1991). In terms of planning, the participants' activities such as setting goals to make organizing and executing learning tasks easier are selected for presentation. Tracking participants' attention, self-evaluative and reflective activities are representations of the construct of "monitoring", where the level of students is the subject of analysis. Checking and correcting (modifying) one's behavior, as one proceeds on a task will be measured to document the level of the subject's regulating process.

*Time effect.* Table 9.3 reports the descriptives of the results on self-regulation of the pre-test and post-test during the semester.

Table 9.3. Descriptive statistics of the results of self-regulation pre-test and post-test (two cohorts)

Cohorts	Tests	Internal consistency	Mean, (SD), Min. - Max.
1 (N = 60)	T1: Pre-test	.66	5.68, (.62), 4.13-7.0
	T2: Post-test	.72	5.64, (.68), 3.47-7.0
2 (N = 40)	T1: Pre-test	.72	5.46, (.75), 3.80-7.0
	T2: Post-test	.67	5.60, (.62), 4.40-6.9

The effect on self-regulation reported in the pre-test and post-test for cohort 1 and cohort 2 were analyzed with a General Linear Model (GLM) for Repeated Measures with self-regulation scores as within-subject variables. All statistical tests were performed at the .05 level. For both cohorts, the results show that the mean score did not change ( $F(1, 59) = 0.14, p = .71$  for cohort 1 and  $F(1, 39) = 1.11, p = .30$  for cohort 2).

The tests show that the overall means of the two cohorts did not change during the semester. This does not imply that no students improved. It might be that the two curricula respectively affected some participants positively and some other participants negatively. This implies a low correlation between the pre-test and post-test scores.

*Correlation of the scores between the two points of measurement.* For cohort 1 and cohort 2, the correlations of the scores between the two points of measurement are far from perfect ( $r_{(T1-T2)} = .54$  and  $.30$  respectively). Students seem to have changed the position in the rank order. There are differences between the participants in the extent they changed during the semester. In the exploratory analysis (presented in section 3.2 of this chapter), we will search for learner characteristics related to the differences in the development of self-regulation.

*Group effect.* The description and analysis of the operationalization of the intended curriculum in the four groups (chapter 7) revealed that the degree to which the curriculum was operationalized differed to some extent between the four groups. From the description and analysis of the project work component of the adapted curriculum (chapter 8), it was observed that the degree of using English as the main medium of instruction and the degree of challenge and support in the three groups were differently practiced. To assess the possible effects of the differences in implementation of each curriculum on the level of self-regulation of the participants, we report the descriptives on self-regulation per group for the two cohorts in table 9.4 and test the effect of group on the average gain.

*Table 9.4. Descriptive statistics of the results of self-regulation pre-test and post-test (two cohorts)*

<i>Cohorts</i>	<i>Groups</i>	<i>Descriptives</i>	<i>Pre-test</i>	<i>Post-test</i>
1	Group 1	M	5.55	5.63
		SD	.71	.75
		Min.-Max.	4.4-6.67	4.13-6.53
	Group 2	M	5.63	5.37
		SD	.51	.81
		Min.-Max.	4.87-7.0	3.47-7.0
	Group 3	M	5.66	5.65
		SD	.66	.53
		Min.-Max.	4.13-6.67	4.93-6.53
	Group 4	M	5.89	5.96
		SD	.61	.52
		Min.-Max.	4.73-6.80	5.20-6.87
2	Group 1	M	5.32	5.48
		SD	.68	.62
		Min.-Max.	4.20-6.40	4.40-6.60
	Group 2	M	5.64	5.73
		SD	.80	0.65
		Min.-Max.	3.80-7.0	4.53-6.93
	Group 3	M	5.42	5.58
		SD	.80	.62
		Min.-Max.	4.47-6.73	4.53-6.40

We ran a GLM test for each cohort with group as between-subjects variable to check for the average gains related to group's effects. Table 9.5 reports the average gains on self-regulation per group for the two cohorts during the two points of measurement.

Table 9.5. Average gains from the pre-test to post-test on self-regulation per group (Standard Deviations in italics)

Cohorts	Groups	Gain	
1	1 (N=11)	.08	<i>.49</i>
	2 (N=17)	-.26	<i>.59</i>
	3 (N=18)	-.01	<i>.63</i>
	4 (N= 14)	.07	<i>.63</i>
2	1 (N=15)	.16	<i>.60</i>
	2 (N=14)	.09	<i>1.12</i>
	3 (N=11)	.16	<i>.70</i>

For cohort 1, no statistical difference was observed ( $F(3, 56) = 1.01, p = .39$ ): No group effect on the average gains in self-regulation among students was observed. An analysis with self-regulation scores as within variable (T1-T2) and groups as between variable did confirm this conclusion: No interaction between group and self-regulation scores did occur ( $F(3, 56) = 1.017, p = .39$ ).

For cohort 2, no statistical difference was observed ( $F(2, 37) = 0.03, p = .97$ ): No group effects on self-regulation gains among students were found. An analysis with self-regulation scores as within-subjects factor (T1-T2) and the three groups as between-subjects factor confirmed this conclusion: No interaction between groups and intrinsic motivation scores occurred ( $F(2, 37) = 0.033, p = .97$ ).

To summarize, the statistical tests revealed that no changes in self-regulation were observed at the cohort level, and that no group effects on the development of self-regulation were observed. However, the participants varied in the extent they changed; the correlation between pre- and post-test scores was weak: Students changed their positions in the rank order during the semester.

### 3.3 Intrinsic motivation

The intrinsic motivation inventory, a questionnaire (18 items, with seven sub-scales) covers four areas: *Interest or enjoyment, perceived competence, pressure or tension and relatedness*. To Ryan and Deci (1992), the level of students' interest or enjoyment in performing learning activities is strongly correlated with the degree of their intrinsic motivation. Perceived competence is theorized as a positive predictor of self-report and behavioral measure of intrinsic motivation to which a student's poor or good performance at a learning task can be traced back. Pressure or tension is in theory seen to be a negative predictor of intrinsic motivation. It is safe to predict that students will not be intrinsically motivated to carry out a learning activity if that learning activity or learning moment brings students some pressure or tension. Relatedness is a measure that can be used to predict students' intrinsic motivation with

reference to the relationship they develop with their teacher and classmates. Good relationships increase intrinsic motivation to learn. For the adaptation of this questionnaire and the questionnaire, see appendix 6.2.

*Time effect.* Table 9.6 presents the descriptive statistics of the results of intrinsic motivation reported in the pre-test and post-test by the participants.

*Table 9.6. Descriptive statistics of the results on intrinsic motivation in the pre-test and post-test (two cohorts)*

<i>Cohorts</i>	<i>Tests</i>	<i>Internal consistency</i>	<i>Mean, (SD), Min. – Max.</i>
1 (N = 60)	Pre-test	.68	5.79, (.50), 4.72–6.83
	Post-test	.73	5.51, (.60), 3.72–6.67
2 (N = 40)	Pre-test	.76	5.52, (.63), 4.22–7.00
	Post-test	.72	5.41, (.63), 4.00–6.83

The results from the pre-test and post-test on intrinsic motivation were analyzed with a General Linear Model (GLM) for Repeated Measures with intrinsic motivation scores as a within subjects variable. All statistical tests were performed at the .05 level. For cohort 1, the result shows that the whole cohort's mean scores on intrinsic motivation changed significantly during the semester ( $F(1, 59) = 11.56, p = 0.01$ ). There was a general decrease in intrinsic motivation in cohort 1 at the end of the semester. For cohort 2, the cohort's mean score on intrinsic motivation was statistically the same at the begin and at the end of the semester ( $F(1, 39) = 1.03, p = .32$ ).

The results from the GLM Repeated Measures tests show that the mean of cohort 1 was lower at the end of the semester and the mean of cohort 2 was the same at the end of the semester. This does not imply that no students improved. Therefore, we checked to which degree the pre-test and post-test scores of each of the two cohorts were correlated.

*Correlation of the scores between the two points of measurement.* For both cohorts, the correlations were low ( $r_{(T1-T2)} = .39$  and  $.38$  respectively). This implies that the rank order of the students in the two cohorts changed during the semester. In section 3.3.2 of this chapter, we will explore whether we can define certain groups of students with certain learner characteristics that gained or lost motivation during the semester.

*Group effect.* From the analysis of the implementation of the two curricula (presented in chapter 7 and chapter 8 respectively), it became clear that the degree to

which the two curricula were operationalized differed between the groups. To measure possible group effects on the average gains in intrinsic motivation, we report the descriptive statistics from the pre-test and post-test on intrinsic motivation per group for cohort 1 and cohort 2 in table 9.7 and we test the effect of group on students' average gain in intrinsic motivation.

Table 9.7. Descriptive statistics of the results on intrinsic motivation pre-test and post-test per group of the two cohorts

Cohorts	Groups	Descriptives	Test 1	Test 2
1	Group 1 (N = 11)	M	5.70	5.50
		SD	.51	.50
		Min.-Max.	4.72-6.28	4.72-6.39
	Group 2 (N = 17)	M	5.77	5.25
		SD	.55	.58
		Min.-Max.	4.78-6.39	3.72-6.11
	Group 3 (N = 18)	M	5.86	5.70
		SD	.44	.66
		Min.-Max.	5.00-6.78	4.39-6.50
	Group 4 (N = 14)	M	5.78	5.57
		SD	.56	.55
		Min.-Max.	4.83-6.83	4.56-6.67
2	Group 1 (N = 15)	M	5.18	5.22
		SD	.67	.61
		Min.-Max.	4.22-6.17	4.11-6.50
	Group 2 (N = 14)	M	5.92	5.40
		SD	.54	.64
		Min.-Max.	5.06-7.00	4.00-6.83
	Group 3 (N = 11)	M	5.47	5.67
		SD	.40	.62
		Min.-Max.	4.89-6.17	4.72-6.72

We ran the GLM test in which the post-test score was tested for both cohorts with the four groups (cohort 1) and three groups (cohort 2) as between-subjects variable to check for the average gains related to group effects. In table 9.8, we report the average gains on intrinsic motivation per group during the two points of measurement for the two cohorts.

For cohort 1, no group effect on intrinsic motivation gains among students was observed ( $F(3, 56) = 1.30, p = .28$ ). An analysis with intrinsic motivation scores as within variable (T1-T2) and groups as between variable did confirm that no interaction between group and intrinsic motivation scores occurred ( $F(3, 56) = 1.298, p = .28$ ) for the interaction during the semester.

For cohort 2, a group effect was observed ( $F(2, 37) = 4.22, p = .02$ ). An analysis with intrinsic motivation scores as within-subjects factor (T1-T2) and the three

groups as between-subjects factor confirmed this analysis: An interaction between groups and intrinsic motivation scores did occur ( $F(2, 37) = 4.22, p = .022$ ). A post-hoc test (Scheffé) revealed that group 3 scored significantly better than group 2 ( $M = 0.71; p = .04$ ).

*Table 9.8. Average gain on intrinsic motivation per group from the pre-test to post-test (Standard Deviations in italics)*

<i>Cohorts</i>	<i>Groups</i>	<i>Gain</i>	
1	1 (N = 11)	-.19	.49
	2 (N = 17)	-.52	.53
	3 (N = 18)	-.16	.66
	4 (N = 14)	-.21	.69
2	1 (N = 15)	.04	.66
	2 (N = 14)	-.52	.66
	3 (N = 11)	.19	.64

To summarize, for cohort 1, a general decrease in the mean of intrinsic motivation was observed. For cohort 2, the mean of the participants' intrinsic motivation remained the same during the semester. No group effect was observed in cohort 1, while in cohort 2, an interaction between groups and intrinsic motivation gain was present. The difference between group 2 (loss) and group 3 (gain) was significant.

### *3.4 Attitudes to autonomous learning*

The focus of the questionnaire on attitudes to autonomous learning (23 items, five sub-scales) is on measuring the learners' cognitive and meta-cognitive skills, social factors and affective factors towards autonomous learning and on the perception of what autonomous English language entails (e.g., the crucial role of the language learners, motivation for learning English, learning English to communicate and learning how to learn English). To test the effect of time on the change of attitudes to autonomous learning, I ran the GLM Repeated Measures test.

*Time effect.* In table 9.9, I present a set of descriptives on the students' attitudes to autonomous learning. The scores of the pre-test and post-test were analyzed with a GLM for Repeated Measures with attitudes to autonomous learning as within-subjects variable. All statistical tests were performed at the .05 level.

For cohort 1, the difference between the mean scores of the pre-test and the post-test was statistically significant ( $F(1, 59) = 8.66, p = .005$ ). The attitudes to autonomous learning of the students involved in the implementation of the intended curriculum have changed. A general increase in attitudes to autonomous learning of the participants in cohort 1 was observed.

For cohort 2, the result shows that the difference between the mean scores of the pre-test and the post-test was statistically significant ( $F(1, 39) = 4.21, p = .047$ ). The attitudes to autonomous learning among the participants involved in the adapted curriculum have also changed: A more negative attitude to autonomous learning of the participants was observed.

Table 9.9. Descriptive statistics of the results on attitudes to learner autonomy pre-test and post-test of the two cohorts

Cohorts	Tests	Internal consistency	Mean, (SD), Min. and Max.
1 (N= 60)	Pre-test	.77	3.60, (.34), 2.50–4.25
	Post-test	.82	3.71, (.33), 3.13–4.38
2 (N= 40)	Pre-test	.63	3.91, (.30), 3.38–4.58
	Post –test	.67	3.78, (.31), 3.13–4.42

In conclusion, an increase and a decrease of the overall mean in attitudes to autonomous learning of cohort 1 and cohort 2 respectively were observed. This does not imply that all students in cohort 1 gained and all those in cohort 2 lost in attitude to autonomous learning. It might be that in both cohorts some students gained more than other students did. As we concluded when presenting the results of time effect on participants' self-regulation and intrinsic motivation, for attitudes to autonomous learning, we will follow the same pattern: We ran the Pearson Correlation test to check to which degree the scores on attitudes to autonomous learning in the pre-test and post-test of each of the cohorts were correlated.

*Correlation of the scores between the two points of measurement.* The correlations of the scores between the two points of measurement ( $r_{(T1-T2)} = .42$  and  $.23$  respectively) were not strong. Students' placement in the rank order changed during the semester; some gained or lost more than others.

*Group effect.* As described and analyzed in chapter 7 and 8, the degree to which the intended curriculum and the adapted curriculum was operationalized was different in the four and three groups of the two cohorts respectively. To check for the possible effects of these differences on the mean gains in attitudes to autonomous learning, I report the results of descriptive statistics from tests 1 and 2 on attitudes to autonomous learning in table 9.10 and test the effect of group on the average gain.

Table 9.10. Descriptive statistics of the results of pre-test and post-test on attitudes to autonomous learning of the two cohorts

Cohorts	Groups	Descriptives	Test 1	Test 2
1	Group 1 (N = 11)	M	3.55	3.61
		SD	.23	.32
		Min-Max.	3.13-3.92	3.13-4.13
	Group 2 (N = 17)	M	3.61	3.53
		SD	.31	.33
		Min-Max.	3.04-4.25	3.17-4.25
	Group 3 (N = 18)	M	3.70	3.80
		SD	.27	.23
		Min-Max.	3.17-4.17	3.42-4.25
	Group 4 (N = 14)	M	3.47	3.89
		SD	.49	.33
		Min-Max.	2.50-4.25	3.13-4.38
2	Group 1 (N = 15)	M	3.88	3.74
		SD	.24	.23
		Min.- Max.	3.58-4.33	3.46-4.29
	Group 2 (N = 14)	M	4.01	3.86
		SD	.32	.39
		Min.-Max.	3.38-4.42	3.13-4.42
	Group 3 (N = 11)	M	3.81	3.75
		SD	.34	.33
		Min.-Max.	3.38-4.58	3.21-4.25

We report the average gains of attitudes to autonomous learning per group during the two points of measurement in table 9.11 and test the effect of group on the mean gains. We ran a GLM test for both cohorts with the four groups (cohort 1) and three groups (cohort 2) as between-subjects variable to check for the average gains related to group's effects.

For cohort 1, a significant statistical difference was observed ( $F(3, 56) = 6.32$ ,  $p = .001$ ). The average gains were affected by groups. Post-hoc tests (Scheffé) revealed that group 4 scored significantly better than group 2 ( $p = .001$ ) and tended to score better than group 1 ( $p = .067$ ) and group 3 ( $p = .062$ ).

For cohort 2, no group effect on attitudes to autonomous learning gains among students was observed ( $F(2, 37) = 0.20$ ,  $p = .82$ ). An analysis with attitudes to autonomous language learning scores as within-subjects factors (T1-T2) and the three groups as between-subjects factors showed no interactions between groups and time ( $F(2, 37) = 0.20$ ,  $p = .82$ ).

*Table 9.11. Average gains in attitudes to autonomous learning per group (Means, Standard Deviation in italics) of the two cohorts*

<i>Cohorts</i>	<i>Groups</i>	<i>Gain</i>	
1	1 (N = 11)	.06	.34
	2 (N = 17)	-.08	.28
	3 (N = 18)	.10	.30
	4 (N = 14)	.41	.38
2	1 (N = 15)	-.14	.28
	2 (N = 14)	-.52	.49
	3 (N = 11)	-.06	.39

To summarize, we observed an increase and a decrease in attitudes to autonomous learning in cohort 1 and in cohort 2 respectively. In cohort 1, a group effect on the development of attitudes to autonomous learning was found. Participants from group 4 gained the most. In cohort 2, no group effect was observed.

### *3.5 Effects of learners' initial characteristics on the effects of the two curricula*

The aim of the curriculum grounded in the theory of task-based language learning is to observe students' gains in self-regulation, intrinsic motivation and attitudes to autonomous learning as the outcomes. These outcomes are aimed at improving the learners' ability to use the target language. Besides the implementation of the intended curriculum as an intervention which might enhance these outcomes, learner characteristics (i.e., learners' initial level of self-regulation, intrinsic motivation, attitudes to autonomous learning and English) could play a role in achieving these outcomes. To check for the contribution of each curriculum to the development of self-regulation, intrinsic motivation and attitudes to autonomous learning by taking into account the learners' initial characteristic as an independent variable, we ran the regression analysis tests. The aim of the tests is to answer the question,

*Which curriculum showed to be more beneficial to participants with relatively low or high initial level of self-regulation, intrinsic motivation, attitudes to autonomous learning, and English to the development of the outcomes (e.g., self-regulation, intrinsic motivation, attitudes to autonomous learning and language achievement)?*

Our approach to analyzing the interaction between cohort and the outcome (e.g., self-regulation, intrinsic motivation, attitudes to autonomous learning, and language achievement) is regression analysis, which allowed us to evaluate the contribution of learner characteristics to the development of self-regulation, intrinsic motivation and attitudes to autonomous learning. For cohorts, we construed a dummy variable (*D\_con*) which is 'on' (equals 1) if a student was in cohort 1; otherwise, this dummy was turned 'off' (equals 0) and hence student was in cohort 2. For each of the two

cohorts, we construed a cohort-specific score for each initial learner characteristic and for each outcome. For example, to compute the effects of cohort and learners' initial level of self-regulation on intrinsic motivation, we used four predictive coefficients: A constant (*CONS*: to be interpreted as the mean score in cohort 1 for students with a zero score for cohort 2), a dummy for condition (*D\_con*: To be interpreted as the mean score in cohort 2 as deviation from cohort 1 for students with a zero score for cohort 1), level of self-regulation in cohort 1, and level of self-regulation in cohort 2. We estimated the regression weight for self-regulation on intrinsic motivation for each of the two cohorts separately and tested its significance. We can describe the score in intrinsic motivation of a student as a function of the initial self-regulation score (*SR*) as

$$Y_i = CONS + \beta_1 * D\_Con + \beta_2 * SR_i * (1 - D\_Con) + \beta_3 * SR_i * D\_Con$$

in which  $Y_i$  is the self-regulation score of student  $i$ , *CONS* is a constant, *D\_con* is a dummy variable for cohort 2, and therefore  $(1 - D\_con)$  is an indicator of cohort 1. In the equation above, two separate effects are formulated for self-regulation score  $SR_i * (1 - D\_con)$  and  $SR_i * D\_con$ . The former refers to the effect in cohort 1 and the latter refers to the effect in cohort 2. The same procedure was applied for other learner characteristics: Intrinsic motivation, attitudes to autonomous learning and English.

The following sections present the results of linear regression tests of the effects of learner characteristics on the development of self-regulation, intrinsic motivation, attitudes to autonomous learning and language achievement.

### 3.5.1 Effect of participants' initial level of self-regulation

The results of the descriptive statistics from the pre-tests on self-regulation of the two cohorts revealed a relatively wide deviation of the initial level of self-regulation of the participants of the two cohorts ( $M = 5.68$ ,  $SD = .62$  for cohort 1 and  $M = 5.46$ ,  $SD = .75$  for cohort 2). For this reason, we tested whether this relatively wide variation of the initial level of self-regulation of participants of the two cohorts might contribute to the enhancement of their self-regulation, intrinsic motivation, attitudes to autonomous learning and language achievement.

*On self-regulation (post-test).* An effect of the initial level of self-regulation on the development of self-regulation was observed in cohort 1 ( $\beta = 2.46$ ,  $p = .00$ ) and in cohort 2 ( $\beta = 1.02$ ,  $p = .05$ ), indicating that the students with a relatively high initial level of self-regulation benefited most from both curricula. Figure 9.1 displays the effect of the learners' initial level of self-regulation to the development of self-regulation in the two curricula.

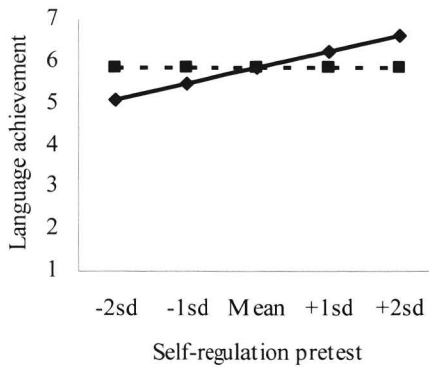
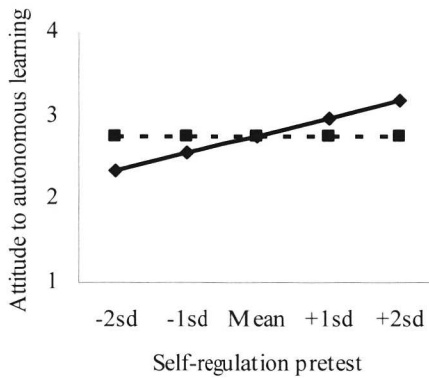
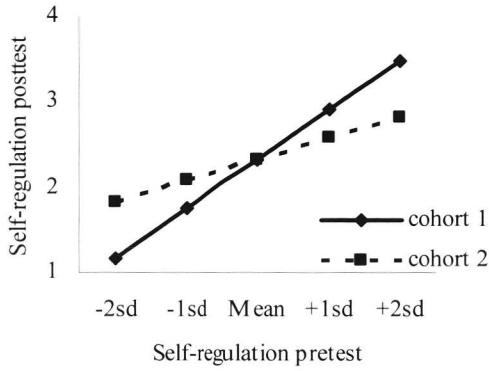
Note that the difference between the two lines seems to be small. However, for a clear insight into the differential effect of the curricula, we must include the variation of the scores. When we take into account the small pooled standard deviation

(.65), the effect size for students with a score on *self-regulation* one standard deviation above the mean is .51, which is a medium effect (Cohen, 1988).

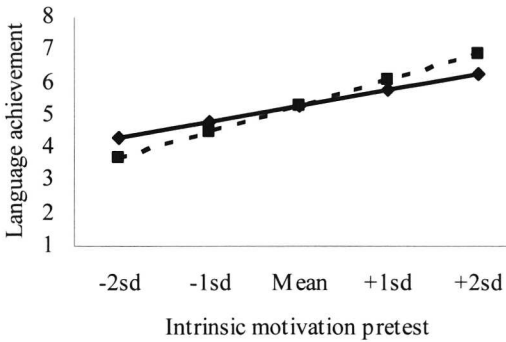
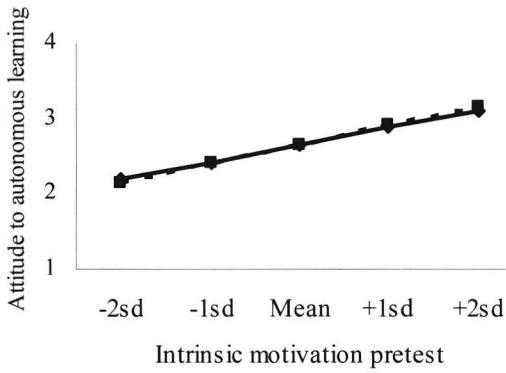
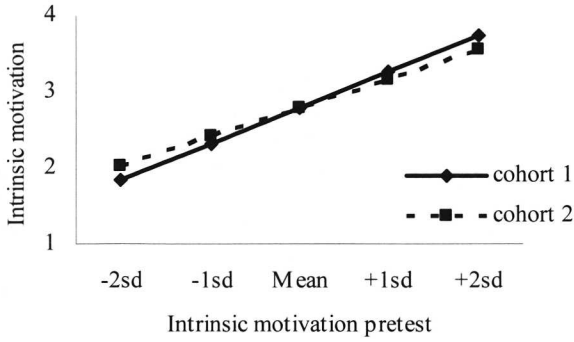
*On intrinsic motivation.* No effect of the initial level of *self-regulation* on *intrinsic motivation* was observed in cohort 1 and cohort 2 ( $\beta = .87, p = 1.46$ ;  $\beta = .24, p = .68$  respectively). This indicates that the initial level of self-regulation is not related to the enhancement of intrinsic motivation.

*On attitudes to autonomous learning.* An effect of the learners' initial level of self-regulation on the development of attitudes to autonomous learning was observed ( $\beta = 1.66, p = .004$ ) in cohort 1. No effect of self-regulation pre-test score on attitudes to autonomous learning post-test score was observed in cohort 2 ( $\beta = .45, p = .41$ ). This implies that the intended curriculum is beneficial for students with relatively high initial scores on self-regulation, while the adapted curriculum is more beneficial for students with low initial scores on self-regulation in respect to attitudes to autonomous learning. Figure 9.2 displays the effect of the learners' initial score on self-regulation to the development of attitudes to autonomous learning. The effect size for the students with a score on attitudes to autonomous learning one standard deviation above the mean is .66, which is a medium effect (Cohen, 1988).

*On language achievement.* An effect of the learners' initial level of *self-regulation* on the development of *language achievement* was observed ( $\beta = 1.09, p = .041$ ) in cohort 1. No such effect was observed in cohort 2 ( $\beta = .079, p = .88$ ). This implies that the intended curriculum benefits the students with relatively high initial score on self-regulation, while the adapted curriculum is more beneficial for students with initial low score on self-regulation. Figure 9.3 displays the effect of the learners' initial level of self-regulation on the development of language achievement. The effect size for students with a score on *language achievement* one standard deviation above the mean is .60, which is a medium effect (Cohen, 1988).



Figures 9.1-9.3. Effects of learners' initial level of self-regulation on self-regulation, attitudes to autonomous learning, and language achievement, in two curricula.



Figures 9.4-9.6. Effects of intrinsic motivation on intrinsic motivation, attitudes on autonomous learning, and language achievement in the two curricula.

The arrows in figure 6.1 show the presentations of the curricula I measured. The implementation of the *intended curriculum* was measured to assess whether it was *implemented* as intended. Its operationalization was documented via classroom observations. We monitored the implementation of *choice* and *interactions*. Teachers' and students' perceptions of the operationalized curriculum were documented to determine which aspects of the curriculum they perceived as to fit the aims of stimulating learner autonomy and communicative competence and which features of the curriculum they thought should be improved to meet these goals. I measured the *attained curriculum* (i.e., the outcomes) as the effects of the operationalization and perception of the curriculum. In the next section, I will present the research questions concerning the quality of the intended and adapted curriculum in both presentations we mentioned: The *implemented* (as operationalized and perceived) and the *attained* curriculum

### 3.5.2 *Effect of participants' initial level of intrinsic motivation*

*On self-regulation.* No effect of the initial level of *intrinsic motivation* on the development of *self-regulation* was observed in the cohort 1 and cohort 2 ( $\beta = 1.39, p = .063$ ;  $\beta = .66, p = .34$  respectively). Students' initial level of intrinsic motivation is not related to the effect of the curricula on self-regulation.

*On intrinsic motivation.* An effect of the pre-test scores of *intrinsic motivation* on *intrinsic motivation* in both cohorts was observed ( $\beta = 2.22, p = .002$  for cohort 1 and  $\beta = 1.70, p = .011$  for cohort 2), which indicates that the two curricula benefited the students with relatively high initial level of intrinsic motivation the most. Figure 9.4 displays the effect of the students' initial level of intrinsic motivation on the development of intrinsic motivation in the two curricula.

*On attitudes to autonomous learning.* An effect of the pre-test scores on *intrinsic motivation* in both cohorts on *attitudes to autonomous learning* was observed ( $\beta = 1.8, p = .009$  for cohort 1 and  $\beta = 1.88, p = .004$  for cohort 2). This implies that the two curricula benefited the students with relatively high initial scores on intrinsic motivation the most. Figure 9.5 shows the effect of the pre-test scores on intrinsic motivation on attitudes to autonomous learning post-test score.

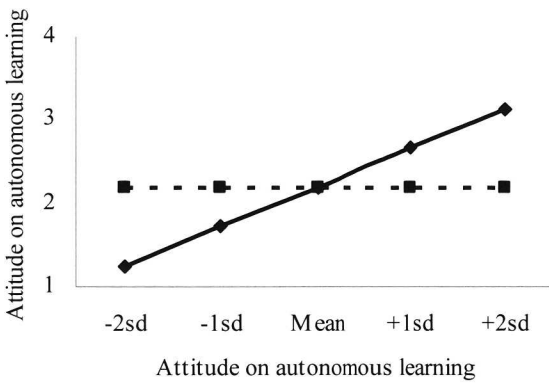
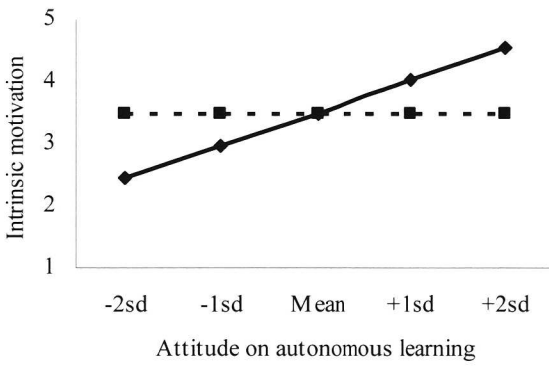
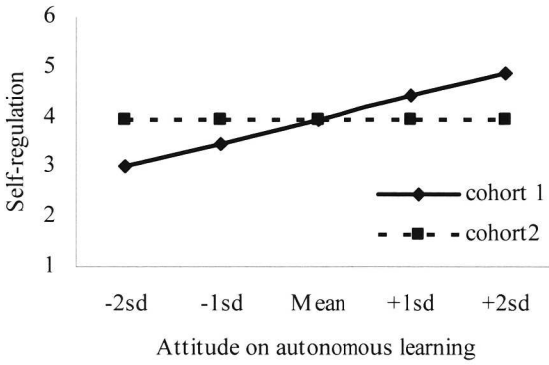
*On language achievement.* An effect of the pre-test scores on *intrinsic motivation* in both cohorts 1 and 2 on *language achievement* was observed ( $\beta = 1.36, p = .028$  for cohort 1 and  $\beta = 2.18, p = .00$  for cohort 2), which indicates that the two curricula benefited the students with relatively high initial level of intrinsic motivation. Figure 9.6 shows the effects of pre-tests score on intrinsic motivation on post-test scores on language achievement in the two curricula.

### 3.5.3 *The effects of participants' initial level of attitudes to autonomous learning*

The ultimate goal of this curriculum innovation study is the development of learner autonomy to enhance the quality of language learning or to develop learner communicative competence. As presented and discussed in chapter 3 and chapter 4 developing learner autonomy and communicative competence are by nature the development of strategic competence (i.e., self-regulated skills). Self-regulation is assumed to relate to students' attitudes to autonomous learning. Therefore, testing the contribution of learners' initial level of attitudes to autonomous learning to the development of self-regulation, intrinsic motivation, attitudes to autonomous learning and language achievement is essential. The results from these tests will give relevant insight into which curriculum the students with relatively high or low initial level of attitudes to autonomous learning should be placed or advised to choose for the optimum development of each variable. The results from the regression tests in which pre-test scores on attitudes to autonomous learning as independent variable and post-test scores on self-regulation, intrinsic motivation, attitudes to autonomous learning and language achievement as dependent variables are reported hereafter.

*On self-regulation.* An effect of *attitudes to autonomous learning* level on the development of *self-regulation* was observed ( $\beta = 1.30, p = .04$ ) in cohort 1. In cohort 2, no effect of the initial level of attitudes to autonomous learning on the development of self-regulation was observed ( $\beta = 1.02, p = .32$ ). This indicates that the students with a relatively high level of attitudes to autonomous learning benefited from the intended curriculum whereas those with relatively low pre-test scores on attitudes to autonomous learning benefited from the adapted curriculum. Figure 9.7 shows the effects of the students' initial level of attitudes to autonomous learning on their development of self-regulation in the post-test. The effect size for students with a score on *self-regulation* one standard deviation above the mean is 1.47, which is a large effect (Cohen, 1988).

*On intrinsic motivation.* An effect of *attitudes to autonomous learning* on *intrinsic motivation* was observed ( $\beta = 1.64, p = .01$ ) in cohort 1; no effect of the initial level of attitudes to autonomous learning in cohort 2 on the development of intrinsic motivation was observed ( $\beta = .89, p = .37$ ). This indicates that the students with relatively high scores on the pre-test on attitudes to autonomous learning benefited from the intended curriculum, while the adapted curriculum benefited the students with relatively low initial level of attitudes to autonomous learning. Figure 9.8 shows the effects of the students' initial level of attitudes to autonomous learning on their development of intrinsic motivation in the post-test. The effect size for the students with a score on *intrinsic motivation* one standard deviation above the mean is 1.66, which is a large effect (Cohen, 1988).



Figures 9.7-.9.9. Effects of attitudes to autonomous learning on self-regulation, intrinsic motivation, and attitudes to autonomous learning.

*On attitudes to autonomous learning.* An effect of attitudes to autonomous learning on attitudes to autonomous learning was observed in cohort 1 ( $\beta = 2.45, p = .00$ ); no effect of attitudes to autonomous learning in cohort 2 on the development of attitudes to autonomous learning was observed ( $\beta = 1.15, p = .22$ ). This indicates that the intended curriculum was more beneficial to the students with relatively high initial score on the pre-test in attitudes to autonomous learning, while the adapted curriculum benefited the students with relatively low scores on pre-test in attitudes to autonomous learning for the development of attitudes to autonomous learning. Figure 9.9 displays the effect of attitudes to autonomous learning on the development of attitudes autonomous learning in the two curricula. The effect size for the students with a score on *attitudes to autonomous learning* one standard deviation above the mean is 1.40, which is a large effect (Cohen, 1988).

*On language achievement.* No effect of the initial level of attitudes to autonomous learning in cohort 1 or cohort 2 on language achievement was observed ( $\beta = .92, p = .10$  for cohort 1 and  $\beta = 1.0, p = .27$  for cohort 2), indicating that the initial level of attitudes to autonomous learning is not related to the effect of the curricula on language achievement.

### 3.5.4 *The effects of participants' initial level of English*

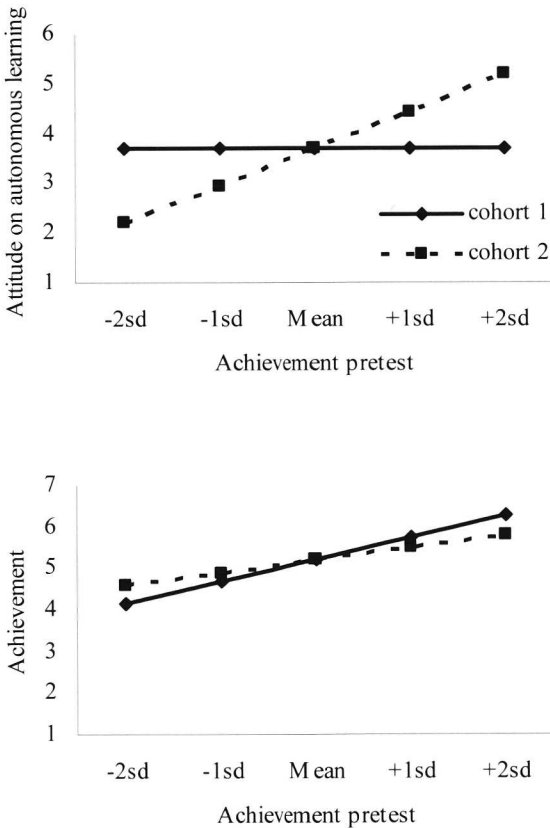
As described in section 9.1 about the participants in the two experiments, the average admission score into the program for participants of the two cohorts was just average ( $M = 5.34$  and  $M = 5.01$  for cohort 1 and cohort 2 respectively) and varied widely between participants ( $SD = 1.05$  and  $SD = 1.82$  for cohort 1 and 2 respectively). Therefore, to test which curriculum benefited which participants (the ones with low or high level of initial English) more research is essential to gain insights for placing students in the right curriculum at their level.

*On self-regulation and intrinsic motivation.* For self-regulation, no effect of the level of English in both cohorts 1 and 2 on the development of self-regulation was observed ( $\beta = .069, p = .84$  for cohort 1 and  $\beta = .14, p = .58$  for cohort 2). For intrinsic motivation, no differential effect of the two curricula in terms of the initial level of English was observed ( $\beta = .32, p = .35$  for cohort 1 and  $\beta = -.20, p = .40$  for cohort 2). This indicates that the level of English is not related to the effects of the two curricula on intrinsic motivation or self-regulation.

*On attitudes to autonomous learning.* No effect of the initial level of English in cohort 1 on the development of attitudes to autonomous learning was observed ( $\beta = .38, p = .25$ ), while such an effect in cohort 2 on the development of attitudes to autonomous learning was observed ( $\beta = .56, p = .016$ ). This implies that the students with a relatively high initial level of English benefited more from the adapted curriculum whereas the intended curriculum is more beneficial for the students with relatively low scores on English in the pre-test. Figure 9.10 displays the effect of the learners' initial level of English on the development of attitudes to autonomous

learning in the two curricula. The effect size for the students with a score on *English* one standard deviation above the mean is .77, which is a medium effect (Cohen, 1988).

*On language achievement.* An effect of the level of English in both cohorts 1 and 2 on language achievement was observed ( $\beta = 1.47, p = .00$  for cohort 1,  $\beta = .083, p = .00$  for cohort 2), which indicates that students with relatively high English scores in the entrance exam benefited more from the two curricula than the students with lower initial score. Figure 9.11 displays the effect of initial English level on the development of language achievement in the two curricula.



Figures 9.10-9.11. Effects of initial English on language achievement in the two curricula on attitude on autonomous learning and language achievement

*Effects of learner characteristics on the effects of the two curricula.* Section 3.2 explored the effects of learner characteristics on self-regulation, intrinsic motivation, attitudes to autonomous learning, and language achievement in the two curricula. The section presented the contribution of each curriculum to enhancing the level of self-regulation, intrinsic motivation, attitudes to autonomous learning and language achievement. Table 9.12 summarizes which curriculum is more effective for different learners to ultimately develop their self-regulation, intrinsic motivation, attitudes to autonomous learning, and language achievement.

From table 9.12, two patterns of effects of learner characteristics on the effects of the two curricula can be observed. One pattern, marked as C1+C2 (five times), indicates that for both curricula, the higher the score on a particular characteristic, the more the student profited from the curriculum on certain dependent variables. The other pattern, marked as C1 (five times) or C2 (one time), indicates that one of the two curricula was more beneficial for a particular level of learner characteristics. In almost all cases, C1 is effective for the students with relatively high initial scores, while C2 is more beneficial for students with relatively low initial scores. This pattern indicates that the two curricula have a differential effect, depending on learner characteristics. If curriculum decision makers should choose between the two curricula, they could take in account what kind of student is selected. When the student population scores relatively high on self-regulation and attitudes to autonomous learning, curriculum 1 results in better effects on learner autonomy (self-regulation, intrinsic motivation, and attitudes to autonomous learning) and language achievement than curriculum 2. When the student population scores relatively low initially, curriculum 2 is a better choice.

Table 9.12. Which curriculum is more effective for different learners?

		<i>Self-regulation</i>	<i>Intrinsic Motivation</i>	<i>Attitudes to autonomous learning</i>	<i>Language achievement</i>
<i>Initial level</i>					
Self-regulation	High	C1 + C2		C1	C1
	Low			C2	C2
Intrinsic Motivation	High		C1 + C2	C1 + C2	C1 + C2
	Low				
Attitudes to autonomous learning	High	C1	C1	C1	
	Low	C2	C2	C2	
English	High			C2	C1 + C2
	Low			C1	

C1: The intended curriculum; C2: The adapted curriculum

To summarize, the results from the regression analysis tests indicate that in many instances the intended curriculum showed to contribute to enhancing the learning outcomes (e.g., self-regulation, intrinsic motivation, attitudes to autonomous learning, and language achievement) of the students with relatively high initial level of self-regulation, intrinsic motivation, attitudes to autonomous learning, and language achievement.

#### 4. DISCUSSION

This section summarizes the outcomes of the two curricula to answer the two questions concerning the outcomes of the two curricula and the contribution of each curriculum and learner characteristic:

- 1) Were students' self-regulation, intrinsic motivation and attitudes to autonomous learning improved?
- 2) Taking learners' characteristics into consideration, which curriculum showed to contribute to the ultimate development of self-regulation, intrinsic motivation, attitudes to autonomous learning and language achievement?

##### 4.1 *The outcomes*

No effect of the two curricula on the development of self-regulation was observed. At the end of the implementation of the two curricula, the cohort's mean in intrinsic motivation of cohort 1 was found to decrease whereas that of cohort 2 was the same. At the end of the implementation of the two curricula, the overall mean in attitudes to autonomous learning of cohort 1 was found to increase whereas that of cohort 2 decreased. The following section attempts to explain why some effects were observed at the end of the implementation of each of the two curricula.

*Exploratory effects of the contribution of each curriculum to the development of the outcomes.* The results from the regression analysis tests revealed that the intended curriculum contributed to the enhancement of outcomes for students with relatively high initial level of self-regulation, intrinsic motivation, attitudes to autonomous learning and English.

##### 4.2 *Explanations*

Reflecting on and evaluating the implementation of the two curricula, the measurement instruments used and the stability of the concepts as dependent variables could bring insights into the failure of observing the enhancement of self-regulation (in experiments 1 and 2), intrinsic motivation (in experiments 1 and 2), and attitudes to autonomous learning (in experiment 2).

One factor that could be questioned is the independent variable or choice operationalized in the two curricula. That is to check whether the intended curriculum was operationalized as it had been intended. The description and analysis of the implementation of the intended curriculum in chapter 7 revealed that, though in a slightly

different degree of operationalization by the four teachers, the intended curriculum was operationalized as intended. As presented in section 2.6.3 (chapter 7), the teachers' summative evaluation on the intended curriculum showed that the curriculum has created "quite a lot" (the four teachers' evaluation, 2003) of opportunities for students to make choices of learning content and learning methodology to do the project work. With reference to the students' evaluation of the characteristics of the intended curriculum, which are supposed to enhance intrinsic motivation and attitudes to autonomous learning, students positively evaluated the seven characteristics of the curriculum that are supposed to enhance participants' intrinsic motivation and attitudes to autonomous learning ( $M = 1.85$  on the scale of 1 as *strongly agree* and 2 as *agree*). Item 1, which asked students if the intended curriculum provided them with enough choices for them to execute the project work, was positively evaluated ( $M = 1.73$  on the scale of 1 as *strongly agree* and 2 as *agree*). Therefore, we might conclude that the curriculum was operationalized as it was intended. The description and analysis of the operationalization of the task-based component of the adapted curriculum (chapter 8) showed that it was operationalized as intended. The description of the five teachers at their tutorials showed that choices of learning content and learning methodology were provided for students to do the unit project. Students' evaluation on the provision of choice for them to do the unit project *Studying in Cantho University* was positive. All groups reported that it was new for them to choose what to do for a project work in the framework of a broad topic proposed but it was good to work on what they liked and the way they found worked for them best. It is clear that the curriculum provided students with authentic choices; in other words, the project work component was operationalized as it was intended. Questioning and reflecting on the operationalization of choice in the two curricula confirms that failing to observe the effects of the two curricula on the enhancement of mentioned dependent variables is most probably not caused by a weak operationalization of the two curricula. It is not the case that the implementation of the intended curriculum and the adapted curriculum, specifically the project work component could have caused the failure to observe the effects of the intervention of the two curricula on dependent variables.

Another possible cause for the lack of effect could be attributed to the quality of the operationalization of the dependent variables. A possible indication of a weak instrumentation is the weak correlation between the pre-test and post-test scores on the same variable. One cause for these low correlations could be a random way of responding to the items in the inventory, related to assumed cultural bias. We did not observe any sign of such a bias, and the indices for internal consistency were reasonable ( $\alpha = .66$  and  $\alpha = .72$  for self-regulation on the pre-test and post-test respectively;  $\alpha = .68$  and  $\alpha = .73$  for intrinsic motivation on the pre-test and post-test respectively), which indicate that there was no random filling in. These internal consistency indices support the validity of the instruments; the weak correlations between the instruments are another indication that different concepts were measured.

The stability coefficient of Pintrich et al.'s (1991) *SRI* was reported to be .79, indicating the concept is moderately stable. Unfortunately, no stability indices of Ryan and Deci's (1992) *IMI* and Camilleri's (1999) *Questionnaires to Help You to Estab-*

*lish Your Personal Level of Autonomy* were reported in this study. We tried to change the concepts of self-regulation, intrinsic motivation and attitudes to autonomous learning by the implementation of our curriculum. One may raise the question whether it is possible to change a concept that is assumed stable. In our study, the low correlations between the pre-test and post-test probably do not indicate a lack of stability of the concept, but indicate the differences in gains. Students' initial rank order was changed most probably as the result of participating in the curriculum. This result needs a more thorough investigation; it might be that different students profit from different interventions when we try to raise their self-regulation and intrinsic motivation.