SUMMARY

Teachers’ and students’ implicit and explicit beliefs may have far-reaching impacts on their teaching behaviour, on students’ classroom behaviour and learning outcomes. These teacher and student beliefs may be related to their gender and teaching domain. Some of these beliefs are related to human attributes, such as the malleability of intelligence. In general, two basic beliefs (mindsets) on the malleability of intelligence are distinguished: the fixed (entity) mindset and the growth (incremental) mindset. In the fixed mindset, people believe their basic qualities, like their intelligence or talent, are fixed traits; a person has a certain amount of intelligence and it cannot be changed. They believe that talent alone creates success, without effort. In a growth mindset, people believe that their most basic abilities can be developed through effort and dedication and hard work, and that brains and talent are just the starting point. Beliefs on the malleability of intelligence might influence students’ self-confidence and the way they handle new challenges.

The general aim of this thesis is to explore the gender-related beliefs and views of teachers and students underlying their classroom behaviour. Four studies assessed 1) teachers’ gender-related implicit beliefs regarding students’ career choices, aptitudes for science and learning styles, 2) the associations between teachers’ mindsets and their appraisal of students’ achievements, 3) the association between teachers’ mindsets and the feedback they provide to students, and 4) students’ views on classroom behaviour and learning.

Chapter 1 provided a general introduction and outlined the theoretical background on teachers’ and students’ explicit and implicit beliefs in relation to classroom behaviour and feedback.

Chapter 2 examined the role of teacher characteristics gender and teaching domain in the formation of gender-related beliefs regarding career, aptitudes for science and learning styles in students. We used two well-known Implicit Associations Tests, the IAT-genderCareer and IAT-genderScience, as well as a new version of the Implicit Association Test, the IAT-LearningStyles, designed specifically for this study. In this IAT, boys’ learning style was associated with independent learning, and girls’ learning style with guided learning. Neither gender nor teaching domain is associated with gender-related beliefs regarding career, but regarding aptitude for science a relation was found, i.e. for female teachers, having a STEM background is associated with weaker gender-related beliefs regarding students’ aptitudes for science. Both a teacher’s gender and teaching domain influence the beliefs about learning styles of boys and girls. The
results of the IAT-genderLearningStyles indicate low gender-related scores. Male and STEM teachers made small associations between boys and independent learning whereas female and non-STEM teachers did not. These findings emphasize the existence of gender-related beliefs and increases insight into the influence of gender and teaching domains on these beliefs.

Chapter 3, study 1 discussed the associations between teachers’ mindsets on the malleability of intelligence and the appraisal of students’ academic achievement. First, teachers’ mindsets (fixed or growth) were assessed using the Theory of Intelligence Questionnaire. Results show that 39.1% of all participants have a fixed mindset, 28.7% an ‘in between’ mindset, and 32.3% a growth mindset. On average, female participants show a stronger growth mindset compared to male participants. Growth mindset teachers show a slightly higher appreciation of increasing scores even when they are insufficient than fixed mindset teachers. This is an important finding because teachers’ appreciation of efforts and improvement can increase students’ motivation. Study 2 focused on the associations between teachers’ mindsets and the feedback they provide in classroom interactions. We analysed 23 video-taped lessons (mathematics and Dutch). We categorized growth feedback and fixed feedback respectively as 1) personal praise and criticism for “doing” (“well done, you tried very hard”), for efforts made or strategies chosen, and 2) teachers’ comments on how results have been achieved and can be improved, i.e. questions regarding strategies, efforts, possible improvements, alternatives for choices hints, cues, dividing in small steps, prompts, suggestions for improvement, and monitoring the process. A little more than 27.5 % of all verbal feedback is categorized as growth-orientated feedback, including 1.25 % personal praise on doing (“you used the right strategy to find the answer”). Fixed feedback is 1) personal praise and criticism for “being” smart, quick, or stupid (“you are a very intelligent person”), and 2) teachers’ comments on what results have been achieved, i.e. correct or wrong answers. More than 28.5% of all verbal feedback interventions is fixed feedback, which includes 1.25% of personal comments related to being (“you are not very smart”). Surprisingly, we found a negative association between growth mindset and the total amount of feedback. Teachers with a fixed mindset provide more feedback compared to teachers with a growth mindset. In general, teachers provide a very limited amount of growth feedback in the classroom.

Considering how vital a role growth feedback has in teachers’ guidance and support of their students in order to enhance students’ learning outcomes, it is essential that teachers become aware of the nature of their feedback and the ways in which they can develop the skill to provide growth-orientated feedback and to improve the use of this type of feedback.
Chapter 4 described the beliefs of girls and boys regarding the malleability of intelligence and their effects on learning and behaviour in classrooms. In order to acquire this information, students (age range 13 - 15 years) were asked to complete the Theory of Intelligence Questionnaire (the same questionnaire which teachers completed, described in chapter 3). A majority of all participants (54%) show a fixed mindset (contrary to 39% in teachers, see chapter 3) and 27.8% a growth mindset. This may impact the way students handle new/difficult lessons and disappointing results. Previous studies suggest that disappointing results were interpreted as personal failures. Students gave up and results declined. Results from the focus groups show that, when directly discussing consequences of ability beliefs for learning, students in general attributed achievements to efforts, i.e. an expression of a growth mindset. Furthermore, although the quantitative data show no gender differences, the qualitative data suggest differences, for example with regard to self-esteem, effort beliefs and motivation to make effort. Girls, for example, express less self-confidence than boys. This showed in their word-choice as well as in their statements that they seek approval from their teachers. In addition, although both boys and girls attribute good learning outcomes to efforts (growth mindset), boys tend to adopt an attitude that disregards academic work and proposes that hard work is generally incompatible with 'cool' masculinity (Jackson & Dempster, 2009).

Chapter 5 summarized the main findings of the research and provided concluding remarks on the studies described in this thesis. Recommendations for educational practice and suggestions for future research that can contribute to the further understanding of teachers’ and students’ gender-related beliefs underlying their classroom behaviour were presented. Our findings and suggestions for future research can lead to further insights on the complex processes in classroom behaviour, learning and teaching.