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Student reading motivation and teacher aims and actions in literature education in lower secondary school

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Abstract

The promotion of learning motivation is a central task of all school subjects. Literature education is expected to promote reading motivation in particular. To meet this expectation, different concepts in literature learning and teaching have been proposed. However, to date little empirical evidence exists of a direct and maybe causal relationship between reading motivation and teacher action. The TAMoLi study (Texts, Activities, and Motivations in Literature Education) uses a multi-level analysis to examine the connection between reading motivation of Swiss and German students at lower secondary level on the one hand, and the aims and actions of teachers in the literature classroom on the other ($N_{students} = 2.017$, $N_{classes} = 116$). The results suggest that students' reading motivation is not directly related to teachers' self-reported aims and actions. Instead, how motivated the students are to read is influenced much more by students' perception of teachers' aims and actions – in particular, by students' perception of teachers' student-oriented aims. These findings add to evidence on student motivation in mathematics and second language learning and teaching.

Keywords

Reading motivation, literature education, teacher actions, perception of instruction, interdisciplinary concept of student perception

1 Introduction: Connecting student motivation with teachers' aims and actions

Students' learning motivation has been described as a key problem in education. Learning motivation is important because it contributes to learning achievements and itself represents a relevant educational goal (Eccles, Wigfield, 2002). Accordingly, learning motivation has been examined from different research perspectives. First, from a learning and teaching perspective in the horizon of subject-matter didactics (*Fachdidaktik*), the motivation to learn is of great importance, since it is concerned with conceiving and examining the design of lessons and methods which can influence the teaching process and students' motivation to learn. Studies on mathematics teaching, for example, have shown that the quality of lesson preparation influences student attitudes (Darling-Hammond et al., 2005). This finding is confirmed and expanded in Lipowsky's (2006) survey of international research on mathematics teaching. Summarising this research, he concludes that learning success and learning motivation are affected by teachers' knowledge and convictions as well as by teaching actions that allow an in-depth examination of subjects during lessons (e.g. through the interesting, clear, understandable and networked presentation of new contents and the activation of pre-existent knowledge).

A Swiss study on reading instruction, in turn, concluded that that a combination of teaching methods can improve adolescents' motivation to learn (Bertschi-Kaufmann, Schneider, 2006).

Second, psychological and pedagogical studies show that learning motivation is a prerequisite for successful teaching (Deci, Ryan, 1985). Correspondingly, promoting and stabilising reading motivation is a central task in reading and literature education. For this to happen, students should experience the access to literature offered in class as beneficial. Furthermore, they should perceive the reading of literature as a valuable activity with which they associate positive experiences and expectations for further reading (Schrijvers et al., 2016; Bertschi-Kaufmann et al., 2018).

Hence in literature education there are various concepts of literature teaching and learning associated with students' reading motivation (e.g. Witte, Sâmihaiian, 2013). To date there has, however, been little inquiry into the extent to which teachers' actions in literature education do actually influence students' reading-related motivation. From the perspective of school practice, this raises the question whether high expectations regarding positive student motivation burden practitioners, and whether they are left without further support that is informed by research when reality punctures these expectations.

The present article tries to determine whether there are any connections between students' reading motivation and teachers' aims and actions in the literature classroom.

For this, multilevel analyses are conducted of student and teacher data gathered in the TAMoLi-Study¹. TAMoLi is an educational study that examined the learning and teaching of literature in German L1 classes in the lower secondary level in Switzerland and Germany from the perspective of students and teachers (Bertschi-Kaufmann et al., 2018; Böhme et al., 2018; Siebenhüner et al., 2019).

Studying the lower secondary level seems particularly interesting: on the one hand, literary education can be imparted to all students as part of their general education by the end of compulsory schooling; on the other hand, adolescence counts as a critical phase in maintaining reading motivation (Bertschi-Kaufmann et al., 2018; Graf, 2007).

Finally, we connect the discussion of these results on literature education to the transversal context of learning and teaching across disciplines, whereby we address findings on teacher action and student motivation in other subjects. In doing so, we bring together perspectives from educational sciences with ones from literature learning and teaching. And we relate this to findings on subject-related learning motivation, such as those on mathematics, the natural sciences and second language teaching.

2 Theoretical context, assumptions and research questions

The assumption that teacher action impacts on student learning motivation is frequently discussed, but has by no means been completely confirmed (Eccles, Wigfield, & Schiefele, 1998). To support the assumption, a number of concepts are usually recruited. This

¹ TAMoLi: *Texte, Aktivitäten und Motivationen im Literaturunterricht der Sekundarstufe 1* [Texts, activities and motivations in literature teaching at lower secondary level].

is also true for the connection between literature education and student reading motivation, where teacher actions in the literature classroom are thought to influence reading motivation (Witte, Sâmihaiian, 2013). The concepts employed to substantiate this are partly informed by transdisciplinary models from psychology or educational sciences; partly they have been developed in the teaching and learning of literature itself. For the purpose of this study, the following concepts were considered relevant: the aims teachers pursue in literature education; the teaching procedures they follow; the offers they extend to students to participate; and the extent to which they accentuate communication about texts.

2.1 Concepts related to student reading motivation and reading engagement

From a psychological perspective, reading motivation is understood as a bundle of different components. The most important components of (intrinsic) reading motivation include: personal reading goals; reading pleasure; and positive convictions about the topics, activities, and outcomes of reading (Guthrie, Wigfield, 2000). The reading self-concept, i.e. expecting to achieve good reading results, is closely connected to reading motivation. It is as important as reading competence to the development of reading motivation. The interactions among reading motivation, reading self-concept and reading competence have been investigated and modelled several times (for German-speaking areas, see Möller, Schiefele, 2004).

Various predictors of reading motivation and reading competence have repeatedly been confirmed at the level of the individual (e.g. in the context of the Programme for International Student Assessment [PISA] studies, see Artelt et al., 2010). Significant predictors are: gender (young female readers are more motivated to read and they perform better than young male readers); migration background (immigrant students report higher motivation to achieve, OECD, 2010; here assessed with multilingualism); parental education; the number of books at home; basic cognitive skills; the attitude towards reading (Hurrelmann, 2004); and the reading frequency.

Focussing on reading socialisation at school, researchers associated with John T. Guthrie developed a theoretically and empirically informed teaching design – CORI (Concept-Oriented Reading Instruction). They successfully implemented CORI in interventions with teachers in primary and lower secondary school. This design aims to strengthen students' reading motivation, and – closely connected to this – their reading activity, text-related communication and reading comprehension. These aims are pursued by orienting teaching towards students' interests and by guaranteeing teaching time for autonomous student use. A core aspect of the design is the possibility to freely select from collections of text, each of which matches a corresponding school subject. The design has primarily been applied in science and mathematics teaching, where positive effects have been proven several times in reading motivation and reading achievement (Guthrie, 2004). Building on this, Guthrie, Wigfield and You (2012) reported studies that examined the influence of teacher classroom actions on students' reading motivation as well as on students' reading activity and performance. Against this background, they developed the concept of reading engagement, which denotes attentive, interaction-oriented and strategy-led reading. Certain teacher actions have proven to be conducive to engaged reading. In particular, this includes teachers granting students autonomy in

text choice (participation) and stimulating text-related interaction (discussion of literature to enhance cognitive activation).

Reading motivation related to fiction has been examined in similar settings, emphasizing intervention and students' reactions. Schrijvers et al. (2019) for example report the development of empirically informed classroom interventions that successfully pursue the aims of reading literature, in particular the aim to understand characters' thoughts and actions "to foster students' insight into human nature" (Schrijvers et al. 2019, p. 8).

Concepts related to the learning and teaching of reading and literature have also been discussed in research on the professions. This research investigates teachers' attitudes and aims related to reading and literature learning and teaching. From her interviews of prospective German-speaking German teachers, Wieser (2008) develops the overarching concepts of reading motivation and literature education each of which pursues different yet overlapping aims. A survey of recommendations for reading and literature learning and teaching for the German-speaking world, shows that the concept *reading promotion* is especially associated with taking into consideration students' reading interest when it comes to text selection – reading pleasure should be kindled by connecting it to young people's existing reading interests (e.g. Nickel-Bacon, Wrobel, 2012). In contrast to this, the concept *literary-cultural education* aims more strongly at text selection that conveys significant educational contents through aesthetically crafted language and thereby expand students' established horizons (Kochan, 1990).

From a developmental perspective, research in literary socialisation has pointed out that at least two stages of crises can be expected during the school-career: One at the point when young students enter primary school and face the challenges of acquiring the ability to read and write. The second crisis comes when students are approximately 12 or 13 years old and many stop reading for pleasure. This so-called *reading puberty* has been explained by students' needs to transform the reading practices of childhood, often characterised as immersive reading of children's literature, so as to meet the new interests and demands of growing up. At the same time students become increasingly autonomous regarding their leisure time and may develop a broad range of interests (Garbe, Holle, & Jesch, 2010). According to Graf (2007) it becomes more and more important from now on to develop a variety of reading modes that prove functional in different situations: e.g. reading for instrumental reasons, for learning, for aesthetic experiences, and as an intimate practice.

2.2 Teachers' aims and actions in literature education

2.2.1 The aims teachers' pursue: content orientation and student orientation

Curricula and educational standards specify aims for the learning of literature. As such, they are a framework within which individual teachers can form their own attitudes and place their own emphases. Witte and Sâmihaiian (2013) identified four paradigms in their comparative analyses of the literature curricula of six European countries (seventh to twelfth grade). These paradigms are distinguished according to the aims that guide them, namely cultural, linguistic, social, and personal growth. Two of them, namely the cultural paradigm (which focuses on literary-cultural knowledge) and the linguistic paradigm (which focuses on formal and stylistic aspects of texts), can be considered *content-oriented*. The other two, namely the social paradigm (which focuses on ethical and

social questions) and the personal growth paradigm (which aims at personal development) connect the reading of literary texts to student experiences and perceptions and can be considered *student-oriented*. There is a common assumption that when teacher aims are content-oriented (directed at literary-cultural knowledge or formal aspects of texts), this is detrimental to student reading motivation (Witte, Sâmihaiian, 2013). Vice versa, it is assumed that when teacher aims are student-oriented, this has a favourable effect on student reading motivation (Schrijvers et al., 2016). However, empirical confirmation of either assumption is still largely missing.

2.2.2 The procedures teachers follow: literary gallery and literary workshop

Teaching procedures are the actions by which teachers stimulate or guide student learning. For the teaching of literary texts, two types of procedures have been distinguished: those characteristic of the *literary gallery* and those characteristic of the *literary workshop* (Reid, 1988). The literary gallery takes an analytic approach to, mostly, canonical texts, so as to facilitate an experience of the quality of the literary (Eggert, 2002). The literary workshop, in contrast, takes a creative, activity-oriented and multimodal approach to literary texts. This approach lends itself more to the student-oriented paradigms that aim to promote social and personal growth. In terms of its effect on reading motivation, common views hold that the literary workshop approach with its student orientation is superior to the literary gallery, as the latter lacks a direct relationship to the learner (Witte, Sâmihaiian, 2013). This assumption is supported by theoretical arguments from learning psychology and reception aesthetics (Deci, Rian, 1985; Spinner, 2016). It has, however, hardly been empirically tested.

2.2.3. The participation teachers extend to students

Student participation and the possibility to contribute to the course and contents of lessons are considered important contributors to learning motivation. This is reflected in the psychological concept of autonomy support (Ryan, Connell, & Deci, 1985), according to which teachers support students' autonomy by allowing them to select from among a range of options that provide meaningful learning content according to central learning goals. Participation and autonomy support furthermore entail support that increasingly enables students to make choices regarding their learning and, thereby, experience learning as self-determined (Deci, Ryan, 1985). Evidence shows that when teachers support student autonomy, this positively effects students' motivation to learn, this is especially true of their intrinsic motivation (Ryan, Deci, 2000). For reading motivation in particular, there is evidence that autonomy support contributes to its development. Guthrie and Wigfield (2000), for example, refer to various studies on reading instruction which demonstrate that when students can select texts that are of interest to them and when they are involved in teaching decisions, it promotes their motivation to read (Guthrie, Wigfield, 2000). It seems reasonable to assume that participation has a similar positive effect on reading motivation in literature education, too. However, in this specificity, this assumption needs to be empirically tested.

2.2.4 The cognitive activation teachers offer to students

Communicating about literature is central to literature learning and teaching because it facilitates understanding among readers about their reading experiences, about the constitution of textual meaning and attention to particular textual characteristics. The

ability to exchange views about texts is, therefore, also a dimension of reading competence, as modelled in socialisation accounts of reading (Hurrelmann, 2004). In this context there is a connection to the concept of cognitive activation, which is a feature of quality teaching in several school subjects. Cognitive activation includes, on the one hand, tasks which prompt the examination of the objects studied; and on the other hand, classroom communication in which students in a class collectively engage with each other about the object that is studied (follow-up communication), in addition to ways to process texts. The notion of cognitive activation within the larger domain of communication about texts draws on the constructivist view that sustainable knowledge structures only emerge through in-depth examination of the object of learning, examination that allows deep information processing (e.g. Brophy, 2000). Evidence for this constructivist assumption, as well as for the connection between conversations that activate cognition and the development of learning motivations has, so far, mainly been provided for mathematics teaching (Leuders, Holzäpfel, 2011). We assume a similar positive connection between follow-up communication and reading motivation also for literature teaching, in which text-related tasks and conversations are central. However, as far as literature education is concerned, empirical studies on the concrete form and efficacy of communicating about texts are still rare (e.g. Schrijvers et al., 2016).

2.3 Student perception of teacher actions

Two questions arise in relation to the connection of teachers' self-reported aims and actions and students' motivation: firstly, how students perceive teachers' aims and actions (e.g. relevant for a validation of perspectives); and secondly, how students' perception is connected to their motivation. Several studies point to students' perception of instruction as a key component that affects their motivation (for example research on the teaching of additional languages on lower primary level in Noels, Clément, and Pelletier, 1999, and research on English as a second language for 15-year-old students in Bernaus and Gardner, 2008). Other research offers examples of the extent to which certain actions on the class level could create positive dispositions on the individual level. In their study on how students perceive instruction, Patall et al. (2018) found a positive effect on students' motivation when they perceived teachers to be supportive. In contrast, students were demotivated when they strongly perceived teachers' actions as control.

2.4 Research questions

Our questions focus on the possible interplay of reading motivation and literature learning and teaching specifically:

1. Regarding the perception of individual students, the question is: To what extent is an individual student's reading motivation connected to their perception of teachers' aims and actions?
2. Regarding the teachers' self-report, the question is: To what extent are teachers' self-reported aims and actions in literature teaching connected to students' reading motivation?
3. Regarding the connection between students' perception and teachers self-report, the question is: How does students' reading motivation relate to the aims and actions of their teachers in literature lessons?

To answer these questions, we focus on the following predictors which seem plausible in view of the theoretical explanations outlined in section 2 above: student-orientation and content-orientation; literary workshop and literary gallery procedures; participatory involvement of students; and giving considerable weight to follow-up communication. It is assumed that when students perceive these features of instruction, this has an effect that can be captured on the individual level. Similarly, if teachers report to pursue the mentioned aims and actions in the classroom we expect an effect on reading motivation on the class level.

3 Methods

We answer these questions by combining data and analyses in ways that connect student and teacher perspectives. On the students' side, data was captured through tests and questionnaires that students completed; on the teachers' side, teachers themselves reported about their teaching actions via a questionnaire. The student and teacher questionnaires contained a number of parallel questions on teachers' teaching activities covering aims, procedures, participation and communicating about texts (cf. Böhme et al., 2018). We used a linear multi-level model that allowed us to connect the data sources (students vs. teachers) and, thereby, determine how an individual student's reading motivation is connected to either that student's individual characteristics, and/or to the class level where teacher actions form a shared condition for all students in that specific class.

3.1 Data

3.1.1 Data collection

The data was collected in 2016 and 2017 as part of the TAMoLi project. In Switzerland, data was gathered in seven cantons in which German is an official language of schooling² (adapted stratified sample). In Germany, data was gathered in the federal state of Lower Saxony (stratified sample). Although data was gathered in multiple locations and schools, the institutions were sufficiently comparable to analyse them together. The two countries belong to the same language area and are similar in terms of their school systems, their competence-oriented curricula, and their overall orientation towards German-language literature, pedagogy and concepts related to learning and teaching (Siebenhüner et al., 2019).

3.1.2 Participants

The data included in the present analysis was collected in 116 classes, belonging to three school types: general type (29 classes, 16% of students), extended type (42, 38% of students) and pro-gymnasium (45, 46 % of students)³. On the student-level the sample comprised 2.017 students of the 8th and 9th grades ($M = 14.1$ years, $SD = 0.8$; 49% female). Students who were not monolingual German-speakers made up 31%. On the class-level the sample consists of 109 teachers ($M = 41.7$ years, $SD = 10.6$; 69% female).

² These cantons are: Aargau, Basel-Stadt, Basel-Landschaft, Bern, Lucerne, Thurgau, and Solothurn.

³ Due to its country-specificity and the comparatively low number of classes (10 classes, 134 students), a fourth school type (integrative type) that only exists in Germany was excluded from the analyses.

Seven teachers were teaching two classes and completed a separate questionnaire for each class. The data provided us with a two-level hierarchical structure: the individual students (level 1) are arranged in classes (level 2). It can be assumed that students from the same class were exposed to similar teaching conditions and that this influenced their response behaviour (see Luke, 2004).

3.1.3 Missing values

Assuming missing at random (MAR; Schafer, Graham, 2002), the R package MICE (Multivariate Imputation through Chain Equation; van Buuren, Groothuis-Oudshoorn, 2011) was used to create 15 imputed data sets, applying the FCS method (fully conditional specification; van Buuren, 2007). Continuous variables were imputed using *predictive mean matching*, dichotomous variables were imputed using logistic regression (see van Buuren, Groothuis-Oudshoorn, 2011). For the performance tests, a three-dimensional Rasch model was used for *plausible values* imputation, using Conquest software (see Adams et al., 1997; Adams, Wu, 2007; Wu et al., 2007).

3.2 Operationalisation

To operationalise the theoretically relevant constructs identified in section 2, we used pre-existent and proven tests where appropriate and developed new scales otherwise. Established scales from educational research were used for: reading motivation (Schipolowski et al., 2018); parental education (HISCED, Highest ISCED, International Standard Classification of Education, UNESCO, 2012); the number of books at home (OECD, 2017); general cognitive ability (*Berliner Test zur Erfassung fluider und kristalliner Intelligenz*, BEFKI: Wilhelm, Schroeders, & Schipolowski, 2014); reading speed and reading comprehension (*LESEN 8-9*; Bäuerlein et al., 2012); for reading self-concept (Hussmann et al., 2017, slightly adapted); for attitude towards reading (Hertel et al., 2014); for reading frequency (Schipolowski et al., 2018); and for participation (Wagner, Helmke, & Rösner, 2009). These established scales met all psychometric requirements.

A new scale was developed for the construct students oriented teachers' aim ($\alpha_{\text{students}} = 0.8$, $\alpha_{\text{teachers}} = 0.7$). This scale is relevant to learning and teaching and central to this study. For students it comprised the following items: 1. "occupy ourselves with social issues"; 2. "learn how to deal with relatively unfamiliar content"; 3. "occupy ourselves with right and wrong behaviour"; 4. "occupy ourselves with issues that concern society as a whole"; 5. "explore our reading preferences"; 6. "develop reading enjoyment"; 7. "critically reflect on texts and characters"; 8. "speak about our own reading experiences"; 9. "identify with the protagonists of a text" (items 1 to 4: social paradigm, items 5 to 9: personal growth paradigm; for teachers the scale comprised the same items except item 2 on the social paradigm).

New scales were also developed for the following constructs, of which only sample items are mentioned here:

- Content-oriented teachers' aim ($\alpha_{\text{students}} = 0.8$, $\alpha_{\text{teachers}} = 0.8$; comprising 8 items for students [4 on the cultural paradigm plus 4 on the linguistic paradigm] and 7 items for teachers [4 on the cultural paradigm plus 3 on the linguistic paradigm]; sample item on the cultural paradigm: "get to know important authors"; sample item on the linguistic paradigm: "get to know different literary devices [stylistic devices, metrics, rhyme, etc.]").

- Literary workshop procedures ($\alpha_{\text{students}} = 0.6$, $\alpha_{\text{teachers}} = 0.6$; consisting of 5 items; sample item: "we change and rewrite a text")
- Literary gallery procedures ($\alpha_{\text{students}} = 0.8$, $\alpha_{\text{teachers}} = 0.7$; consisting of 4 items; sample item: "we find out about the effect of a text").
- Follow-up communication ($\alpha_{\text{students}} = 0.7$, $\alpha_{\text{teachers}} = 0.7$, consisting of 4 items; sample item: "we compare our thoughts on the characters and their actions through conversation").

All newly developed scales used a 4-point Likert scale to assess either agreement (1 = "not at all" to 4 = "totally") or frequency (1 = "very seldom or never" to 4 = "often"). They were developed parallel for students and teachers, with minor differences between them on the item level.

3.3 Analysis and multi-level design

To investigate the effects of teacher actions on students' reading motivation with a data structure comprising two levels, a multi-level analysis is appropriate (cf. Luke, 2004). The individual students were located at the individual level (level 1). The group level (level 2) consisted of the classes, in which students were taught by the same teacher. We used the R package lme4 (estimation method: restricted maximum likelihood, cf. Bates et al., 2015) to calculate a linear multi-level model comprising two levels. It was assumed that average reading motivation could differ from class to class, which is why we calculated a random intercept model. The slopes were assumed to not be variable and were therefore kept fixed.

As the theoretical explanations showed, the variables of interest related to teachers' teaching actions exist in both the students' perspective and at the class level the teachers' self-perceptions. Five models were calculated so as to analyse the effects of the variables of interest from the student and teacher perspectives. This allowed us to thoroughly examine the relationship between teacher actions and student reading motivation:

- The **zero model** included only the intercept (zero model, cf. Luke, 2004). This made it possible to determine whether, on average, reading motivation differs between classes. The intraclass correlation coefficient (ICC) could then be calculated to quantify to what extent individuals in the same class resemble each other in their reading motivation, i.e.: is reading motivation rather homogenous within classes and heterogeneous between classes or vice versa?
- **Model 1** included only control variables as predictors. Thereby it was possible to determine how much these variables on their own already predict reading motivation. This served as a basis for comparison: comparing the following models (2 to 4) with model 1, showed how much of reading motivation could be explained by the relevant variables related to the students' and the teachers' perception of the lessons in addition to the explanatory power of the control variables.
- **Model 2** addressed our first research question about the connection between students' perception of teaching and their reading motivation. It included the variables pertaining to students' perception of teaching activities.

- **Model 3** addressed our second research question. Here the focus shifted to the teachers' perspective and their self-reported teaching actions, as we were interested in whether there was a connection between the latter and students' reading motivation. This model included the variables related to teachers' perception; variables related to students' perception were removed.
- **Model 4** addressed our third research question on the overall connection between teachers' goals and actions and students' reading motivation. It included all student and teacher variables. Thus the specific and mutually controlled effects became apparent and it was possible to estimate what actually proved to be explanatory for students' reading motivation.

Each model was calculated for all 15 imputed data sets, and the coefficients were pooled using the R-package mice and the function lmer_pool (cf. van Buuren, Groothuis-Oudshoorn, 2011).

In order to best model the relationships between the predictors and the criterion, linearity tests were performed. No quadratic relationships were found, hence no variables were transformed and included in the models. In addition, multicollinearity tests were performed, which yielded unproblematic results for all variables.

Since the specific research interest in the different models concerned different levels, centering was adapted accordingly (cf. Enders, Tofighi, 2007). In models 1 and 2 the variables were centered at the group-mean. This means the variance components were included in the model separated into two variables: the centered variable at individual level and the class mean at group level. In models 3 and 4 the variables of the individual level were centered at the grand-mean. The variance components of both levels remained in one variable.

4 Results

4.1 *The contribution of individual and group-level factors to reading motivation (zero model)*

We used the zero model to determine how much reading motivation varied – on the one hand, between classes (i.e. on the group level) and, on the other hand, between individual students (i.e. on the individual level). The standard deviations of the residuals and the random effect of the intercept, which indicate the distribution of the variance of reading motivation at individual and group level, showed that reading motivation strongly depended on individual characteristics and less on factors affecting the whole class. Effectively, 10% of the total variance of the students' reading motivation was at group level; 90% was at an individual level (ICC = 0.099) – the total variance was 0.63.

From the perspective of teaching and learning, this means that the teachers' self-reported actions could only have a limited main influence on students' reading motivation.

Tab. 1: Results of the multi-level models 0-4

Variables	Zero model	Model 1	Model 2	Model 3	Model 4
Intercept (variable)	2.53***	0.96*	-0.76*	2.34***	2.36***
Control variables (level 1 and 2, fixed)					
Gender		0.27***	0.23***	0.27***	0.24***
Multilingualism		0.12***	0.11***	0.13***	0.12***
HISCED group		0.00	-0.01		
HISCED class mean (L2)		0.00	0.01		
HISCED grand				0.00	-0.01
Books at home groups		0.03*	0.03*		
Books at home class mean (L2)		-0.1	-0.04		
Books at home grand				0.02*	0.03*
BEFKI group		0.02	0.02		
BEFKI class mean (L2)		0.02	0.06		
BEFKI grand				0.03*	0.03*
Speed reading group		0.07**	0.07**		
Speed reading class mean (L2)		0.02	0.00		
Speed reading grand				0.05*	0.04*
Reading comprehension group		0.05**	0.05**		
Reading comprehension class mean (L2)		0.06	0.07		
Reading comprehension grand				0.05**	0.06***
Reading self-concept group		0.06**	0.07**		
Reading self-concept class mean (L2)		0.13	0.19		
Reading self-concept grand				0.07**	0.08***
Attitude towards reading group		0.42***	0.34***		

Variables	Zero model	Model 1	Model 2	Model 3	Model 4
Attitude towards reading class mean (L2)		0.60***	0.46***		
Attitude towards reading grand				0.44***	0.35***
Reading frequency group		0.17***	0.16***		
Reading frequency class mean (L2)		0.21***	0.19***		
Reading frequency grand				0.17***	0.16***
School type A (L2)		0.08	0.06	0.04	0.03
School type (L2)		0.06	0.07	0.05	0.05
Students' perception (level 1 and 2, fixed)					
Student-oriented group			0.19***		
Student-oriented class mean (L2)			-0.03		
Student-oriented grand					0.19***
Content-oriented group			0.06		
Content-oriented class mean (L2)			0.19		
Content-oriented grand					0.06
Literary workshop group			0.04		
Literary workshop class mean (L2)			0.17*		
Literary workshop grand					0.04
Literary gallery group			0.06*		
Literary gallery class mean (L2)			-0.01		
Literary gallery grand					0.05
Participation in Ger lessons group			-0.03		
Participation in Ger lessons class mean (L2)			-0.01		
Participation in Ger lessons grand					-0.02
Participation in text selection group			0.01		

Variables	Zero model	Model 1	Model 2	Model 3	Model 4
Participation in text selection class mean (L2)			0.03		
Participation in text selection grand					0.01
Follow-up communication group			-0.01		
Follow-up communication class mean (L2)			0.02		
Follow-up communication grand					-0.01
Teacher perception (Level 2, fixed)					
Student-oriented				-0.04	-0.06
Content-oriented				0.07*	0.05
Literary workshop				0.02	0.03
Literary gallery				-0.01	-0.01
Participation in Ger lessons				-0.01	-0.01
Participation in text selection				0.02	0.02
Follow-up communication				0.04	0.04
Marginal R^2	0.0	0.49	0.52	0.49	0.52
Conditional R^2	0.1	0.49	0.52	0.49	0.52
SD residual Level 1	0.75***	0.56***	0.55***	0.56***	0.55***
SD random effect Level 2	0.25***	0.02	0.00	0.01	0.01

Criterion: Students' reading motivation; unstandardised regression coefficients; N=2017

levels of significance: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

models 1, 2: Group mean centering

models 3, 4: Grand mean centering

reference category school type: school type C

variables of interest are highlighted in green

L2 = level 2

4.2 The contribution of control variables to reading motivation (Model 1)

Model 1 showed that our results confirmed well-researched relationships between individual characteristics and reading motivation (see section 2.1). Thus, gender, number of books at home, reading competence (reading speed as well as reading comprehension), reading self-concept, attitude towards reading, and reading frequency (both at

the individual level and in the class average) had the expected positive effects on reading motivation. However, parental education, cognitive abilities, and type of school did not have any significant effects on reading motivation.

The standard deviations of both the residuals and the random effect diminished considerably when model 1 was compared to the zero model. This means that a large proportion of reading motivation could already be explained by the control variables (marginal and conditional $R^2=0.49$). Models 2 to 4 show to what extent teacher aims and actions still provide additional explanatory power.

4.3 The contribution of students' perception of teachers' actions to students' reading motivation (Model 2)

To address research question 1 – to what extent individual student's reading motivation is connected to their perception of their lessons – we added the corresponding variables in model 2.

Three variables had a significant influence on reading motivation:

- Students' perception at individual level of their teachers' student-orientation showed a significant positive effect. With a value of 0.19, this coefficient indicated a substantial contribution to the explanation of reading motivation. The result confirmed the assumption of a positive correlation at the individual level.
- Students' perception at class level of literary workshop procedures confirmed our assumption with a significant positive effect on reading motivation (0.17). The more frequently the students in a class perceived workshop procedures, the greater their average reading motivation.
- Students' perceived frequency at individual level of literary gallery procedures had a slight positive effect on reading motivation with a coefficient of 0.06. It thus exceeds the influence of workshop procedures on the individual level and, in contrast to the class level, contradicts our assumption.

When we included variables related to student perception in model 2, the proportion of explained variance (marginal and conditional R^2) increased from 0.49 (model 1) to 0.52 (model 2). Models 1 and 2 were compared using the F-test. It was found that the additional variables significantly ($p < 0.001$) improved model 2: in other words students' perception clearly contributed to explaining reading motivation.

4.4 The contribution of teachers' self-reported aims and actions to reading motivation (Model 3)

To answer research question 2 – to what extent teacher aims and actions in literature teaching are connected to reading motivation – we shifted the focus from the predictors on the students' side to the predictors on the teachers' side.

The only significant effect was found when the teachers' aims were content-oriented. The coefficient of 0.07 indicates a slight effect. This refuted our assumption that a content-orientation that focussed on literary-cultural knowledge and formal aspects of texts would have a negative effect on reading motivation.

In model 3 the proportion of explained variance was reduced. Thus, the variables related to teachers' self-reported aims and actions do not explain more of the variance in reading motivation than the control variables explain on their own.

4.5 The contribution of teachers' aims and actions (students' perceptions and teachers' self-report) to reading motivation (Model 4)

To answer research question 3 – namely how students' reading motivation relates to the aims and actions of their teachers – we included all potentially influencing factors on both the students' and the teachers' side in model 4. With this model, we assessed which factors contributed to explaining reading motivation under the control of all other predictors.

Students' perception of a student-orientation had a clear and robust effect of 0.19 on reading motivation. Significance and effect size indicate a high explanatory power. No other significant effects were observed, neither on the part of the students nor on the part of the teachers. In contrast, the control variables maintained their effects with only minor changes.

The change of the proportion of explained variance and the standard deviations of residuals was similar in the change from model 3 to 4, as in the change from model 1 to 2 (marginal and conditional $R^2 = 0.49$ to $R^2 = 0.52$). Thus, the variables associated with students' perception of teachers' actions seemed to be responsible for this change in the explained variance from model 3 to 4 (the proportion of explained variance did not increase from model 1 to 3). The relevant variables self-reported by the teachers had no effect on students' reading motivation when controlled for the students' variables and did not contribute to a model improvement (a comparison of models 2 and 4 using the F-test showed no significant model improvement).

4.6 Summary of results

The first research question focused on the relationship between students' perception of teacher actions and students' reading motivation. Three significant connections regarding student perceptions were identified: student-orientation, literary gallery procedures and literary workshop procedures.

The second research question focused on the relationship of teachers' self-reported actions to students' reading motivation. Here the results delivered a different picture. No connections could be found to any of the three constructs confirmed in question 1. Instead, when teachers aimed to prioritise content – i.e. when they focused on literary-cultural knowledge or the formal aspects of texts – a positive effect on reading motivation could be detected. This connection was, however, only slight.

The third research question related both students' perspectives on teaching actions as well as teachers' self-reports to students' reading motivation. Here, we found that students' perception of a student-orientation continued to contribute strongly to reading motivation. All other variables showed no significant effects.

5. Discussion

What emerges from numerous studies on motivational psychology in general (e.g. Eccles et al., 1998) obviously also applies to subject-specific learning and teaching – namely that a central goal of teaching is to promote and preserve learning-related motivation. Using multi-level analytical models, we specifically investigated the connection between reading motivation on the one side and literature learning and teaching on the other.

Our findings confirmed a positive connection between student-oriented teaching and students' reading motivation. Importantly, though, the positive effect was only evident when students perceived such a student orientation.

This finding, namely that student perception is vital when examining the effects of instruction, corresponds to other findings on subject-specific learning and teaching – for example foreign language teaching (Bernaus, Gardner, 2008) and science teaching (De Meyer et al., 2014; Patall et al., 2018, whereby the latter included only student data and no data on teachers). The importance of students' perception of teaching actions, however, requires further investigation: Firstly, students' interpretation of teaching actions can diverge from teachers' own interpretation of those actions. Secondly, among students, perceptions can differ – this is evident from the effect of the Group-Mean-centring in model 2. We therefore propose that teacher actions be viewed as offers open to interpretation, which individual students take up differently. Our study confirms that how students individually perceive and interpret these offers is important for their reading motivation. Discussions within subject-specific learning and teaching as well as interdisciplinary discourses across these areas of specialisation, however, still lack a common empirical basis that shows how students' perception of teaching action together with their motivation to learn can be improved within different subjects. Such a shared empirical basis would put current research on students' perception and their motivation to learn on the same footing as the lively, empirically supported discourse which already exists for cognitive activation or dialogical learning in different subjects (Resnick et al., 2015).

All our other assumptions about the influence of teaching actions on reading motivation had to be either discarded or were confirmed only in part (i.e. models 1 to 3). It is particularly surprising that a connection could not be found between student participation (in the sense of autonomy support) and reading motivation. This diverges from several psychological studies that have demonstrated the powerful effect of this concept, and from similar positive effects found in the teaching and learning of other subjects than literature. Also surprising, was the fact that our findings did not confirm the theoretical assumption that reading motivation is connected to cognitively activated talk about texts, an assumption that was supported by, for example, studies on mathematics education (Lipowsky, 2006; Leuders, Holzäpfel, 2011).

These assumed connections might be absent due to the control variables on the one hand and, on the other hand, the particular juncture in which students in our study find themselves given their age and the education trajectory. Many of the control variables were strongly connected to reading motivation. All models showed very similar effects to those already confirmed several times in reading research and especially in large-scale assessment studies such as PISA (e.g. Artelt et al., 2010). As in those studies, our

findings confirmed that decisive factors in the development of reading motivation included: gender, number of books at home, reading competence, reading self-concept, attitude towards reading and reading frequency. Model 1 showed that the control variables (such as gender, attitude towards reading, and reading frequency) already explained around half of the variance in reading motivation, thereby proving their importance. Counter to our expectations, our findings further also show that the variables on teaching aims and actions could not add any considerable variance explanation exceeding the control variables.

Applied to teaching practice, it is however possible that teachers can use their teaching actions to positively influence a number of the significant control variables and thereby enhance reading motivation. Thus, if teachers succeed in strengthening students' reading competence, reading self-concept, and attitude towards reading or reading frequency, this can be expected positively develop students' reading motivation.

The ICC indicated no direct effects of the variables at the class level. In our study, reading motivation can be seen as a comparatively stable construct at class level – accordingly the direct influence of teachers' aims and actions is necessarily small. The degree of individuality of students' reading motivation may, to some extent, be connected to their position in the education trajectory and their age. Our study examined students and teachers in the eighth and ninth grade in lower secondary school. In Switzerland and Germany, students usually get new teachers in grade 7. In Switzerland, students only start secondary education in grade 7, which means that they do not only get new teachers, but classes are also newly constituted. Hence, by the time students have reached 8th and 9th grade, their new teachers will not have had long to shape the reading motivation of the students in their newly compiled classes.

In addition, these students have entered reading puberty (Graf, 2007), which is generally considered critical in the reading career. Thus, their reading motivation can be expected to be generally lower than in their childhood and the demand to master the challenging shift towards more differentiated reading practices is considerable (Garbe et al., 2010). Teachers certainly acknowledge the general challenge, as is evident from their answers to our questions on aims, text choice (Siebenhüner et al., 2019), and teaching procedures (Böhme et al., 2018). This might indicate the need for a more differentiated notion of reading motivation for both research and teaching practice, a notion that covers a variety of aims – reading for pleasure, reading to learn, and reading to explore horizons.

The limited effect of teacher actions on reading motivation specifically should, however, not be generalised as a proof that teachers contribute little to literature learning and teaching overall. The lower secondary literature and reading curriculum also has other important aims besides developing reading motivation, namely to support reading comprehension in general and to develop content-oriented expertise or disciplinary knowledge. Though the teachers in our study do not prioritise these disciplinary aims, they are still part of the curriculum. In another, still ongoing part of the TAMoLi project, we are using a video study and interviews with teachers and students to gain more insight into how teachers approach literary texts and how they create meaningful experiences with literature for students. As we chose the students for the interviews according to their level of motivation, that data may help to develop a more differentiated picture of the challenges and potentials related to reading literature in grades 8 and 9.

Overall, our findings suggest that there is only a comparatively weak connection between students' reading motivation in grades 8 and 9 and the aims and actions of their teachers. However, the strong effect of students' perception of a student orientation should not be overlooked. This still confirms the importance of experience-oriented approaches to literature learning and teaching which pay considerable attention in dealing with literature to students and their development in interacting with literature (Schrijvers et al., 2016).

Our results thus contribute to the interdisciplinary discourse on the relationship between student motivation and teacher action. It does so by emphasising that student perceptions of teaching are decisive and by pointing out that findings on the effects of teacher action on student motivation are selective. What our study shows for literature teaching on the lower secondary level in German-speaking Switzerland and Germany (Lower Saxony) corresponds to the overarching discourse on subject-specific learning and teaching. From an empirical perspective, there are similar findings for foreign language (Bernaus, Gardner, 2008) and science teaching (Patall et al., 2018 and De Meyer et al., 2014). Lipowsky (2006) finds clearer effects of cognitive activation for mathematics teaching. Also belonging to the same context, are studies that have investigated student motivation in more controlled teaching situations, such as Hofferber's (2015) findings on biology teaching, where a concrete teaching unit was given. There is therefore a shared empirical basis for the conclusion that students' perception of teaching goals and actions is decisive for learning motivation.

An intensified exchange among the individual subject-specific learning and teaching disciplines is also interesting from a conceptual perspective. It promises suggestions regarding the question how students' perception of learning in the respective subjects can be further modelled and operationalised. An interdisciplinary based instrument could facilitate the discourse among the subject-specific disciplines and offer a foundation for comparative studies.

To enhance our understanding of effects from the perspective of subject-specific learning and teaching, it would furthermore be desirable to conduct subject-specific learning and teaching intervention studies which examine the interconnections between teachers' pursuit of a student orientation and students' learning motivation. It would also be valuable to determine more precisely on what students' perception of teachers' actions depend. Answers to the latter question could show teachers how students perceive their actions and with what actions in their respective subjects teachers can best reach students.

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