Appendix
Questionnaire Development and Theoretical Justification

		Section A: Biographical information			

	Category	Question type	Question formulation	Response options	Justification
1	Age	OE	Date of birth	Day/month/year	Age may be related to experience, which may influence perceptions (Donohue & Bornman, 2014).
2	Sex	C	Please indicate your gender	Male /Female	Gender may play a role in a person's responses to certain types of questions (Leedy & Ormrod, 2014).
3	Teaching experience	OE	How many years have you been teaching learners at any school?	… in years	Teacher attitudes may change over time as a function of experience and expertise (Avramidis et al., 2000).
4	Teaching experience	OE	How many years have you been teaching learners with special educational needs?	… in years	Experienced teachers may be better resources with respect to functional performance of their learners (Alant, 1999).
5	Classroom context	OE	Which class are you currently teaching?	… please specify	Learners who use and/or benefit from KWS are part of a heterogeneous group (Meuris et al., 2014).
6		OE	How many learners are in your class?	… please specify	Class size is a factor that may influence perceptions of inclusive education and has been identified as a stress factor (Avramidis et al., 2000; Engelbrecht et al., 2003).

7	# of learners with complex communication needs	OE	How many learners in your class have complex communication needs? (i.e., speech is limited or unintelligible)	… please specify	Because learners with complex communication needs are part of a heterogeneous group (Meuris et al., 2014), it is important to better understand class dynamics with regard to class size and student abilities to determine learner ratio of complex communication needs versus speaking learners in the classroom context (Tönsing & Dada, 2016).
8	Learner s' age group	OE	What is the age group of the learners in your class?	… in years	Learners using KWS are part of a heterogeneous group (Meuris et al., 2014). KWS is frequently used with children, adolescents, and adults with intellectual disability varying from mild and moderate to severe and profound (Meuris et al., 2014).
9	Curriculum	OE	What curriculum or program is followed at your school?	… please specify	Curriculum implementation should be flexible with regard to teaching methods, assessments, and pace; and development of teaching material (Department of Education, 2001).
10	Qualifications	OE	Please indicate your highest level of formal qualification	Please tick the appropriate box: Lower than matric, matric, teaching diploma/degree; other: please specify	According to SACE (2011) all teachers should have an appropriate qualification and should be registered with the Department of Education (matric is equivalent to Grade 12, the last year of high school education).

Note. OE= open ended; C= closed.

		Section B: Perceptions regarding KWS		
Category	Question type	Question formulation	Response options	Justification
1	Manual sign use	C, 5-pt. Likert	To what degree do you use KWS within a school environment?	Within the classroom (1-5), outside the classroom (1-5). Other (please specify)	Consistent use of AAC/KWS skills may be extended to other environments (Rombouts et al., 2017a).
2	Teaching strategies	C, 5-pt. Likert)	To what degree do you use the following strategies when using KWS within your classroom?	• I use signs in a structured activity • I use signs to support the theme of the week • I use pre-determined sign(s) per week • I combine signs with spoken words • I combine signs with spoken words and pictures • I use my own made-up signs or gestures • I use signs for all classroom activities • I use signs with all learners	Teachers may use AAC more intensively during structured activities such as the morning welcome and less during individual conversations (DiCarlo et al., 2000; Norburn et al., 2016; Rombouts et al., 2018).

3	**Teaching strategies**	**OE**	**Please specify other strategies you find useful in the classroom (e.g., "Sing-and Sign").**	**… please specify**	**Teachers may use AAC more intensively during structured activities such as the morning welcome and less during individual conversations (DiCarlo et al., 2000; Norburn et al., 2016; Rombouts et al., 2018).**
4	Usefulness of KWS	C, 5-pt. Likert OE	Please rate how useful you find KWS to support the following functions at school:	• receptive language • speech • learning • receptive and expressive language • motivate learners to communicate in class • motivate learners to socialize with peers • control challenging behaviour • reduce stress and anxiety • prepare learners for future changes • Other: please specify	The augmented input of signs may support receptive language skills, expressive language skills and language learning, and enhance participation and interactions within the classroom (Clibbens, 2001; Dada & Alant, 2002; Light & McNaughton, 2012; Rombouts et al., 2017a).
5	Motivation	OE	What motivates you as a teacher to use KWS in the classroom?	… please specify	Motivation of using KWS is also related to response efficiency (Johnston, 2006).
6		OE	Are there any reasons why you do not use KWS at school?	… please specify	Motivation of using KWS is also related to response efficiency (Johnston, 2006).

| 7 | Team support | C, 5-pt. Likert) OE | Please rate to what extent who of the following people in the table below (on actual survey) support the use of KWS for learners within your school? | • speech therapist
• occupational therapist
• teaching assistant
• fellow teachers
• principal
• parents
• Other: please specify | A support team may provide teachers with training, time, and resources required to support students with complex communication needs (Blackstone et al., 2007; Bornman & Henkeman, 2019; Calculator & Black, 2009 |
| 8 | Challenge (Intrinsic) | C, 5-pt Likert OE | To what degree do you find the following factors a challenge with regard to the use of KWS at school? | • I am usure how to use KWS within the classroom
• I am unsure of how to create opportunities for learners to use KWS in the classroom
• I find that the classroom routine hinders the use of KWSI do not always have time to use KWS in the classroom
• I find other adult communication partners (e.g., teachers, therapists, assistants or parents) do not encourage the use of KWS
• I find it difficult to make KWS a habit
• I find it difficult to do two things at once e.g., sign and speak
• Other, please specify | The relationship between belief in AAC and the use of AAC may be shaped by a complex interrelation of various personal and environmental factors (Meuris et al., 2014; Norburn et al., 2016; Rombouts et al., 2016; Soto, 1997; Tönsing & Dada, 2016). |

9	Media awareness	C, 5-pt Likert, OE	To what extent do you think the following media creates awareness among the general public with regard to KWS?	• Television • Internet • Social media(e.g., Twitter) • Printed media (e.g., newspapers, magazines) • Radio • Other: please specify	Increased media awareness may reduce stigmatization and effect a change in attitude towards signing (Sheehy & Budiyanto, 2014).
10	Barriers (Extrinsic)	C, 5-pt Likert, OE	To what extend do you think the following barriers (challenges) hinder the use of KWS?	• Multilingualism • Motor disability • Minimum level of language understanding • Limited time for in-service training • Lack of follow-up (training) to reinforce skills acquired • Limited time in class • Stigmatization • Lack of funding to purchase training manuals • Lack of support from school management • Other training courses more attractive • Lack of support from fellow teachers • High staff turnover • Untrained staff	The relationship between belief in AAC and the use of AAC may be shaped by a complex interrelation of various personal and environmental factors (Hornby, 2015; Kent et al.,1998; Norburn et al., 2016; Rombouts et al., 2016a; Soto, 1997; Tönsing & Dada, 2016).

				• Inadequate school curriculum to support KWS • Limited access to training manuals (resources) • Other: please specify	
11	Training	C	Have you received training regarding the use of KWS to support learning?	Yes / No If yes, please specify	Staff training programs are a systematic attempt to bring about change in the classroom practices of teachers, in their beliefs and attitude and in the learning outcomes of learners (Chadwick, 2008; Guskey, 1986; Pate & Khamis-Dakwar, 2005).
12	Training	C	Would you like further training in the use of KWS to support learners in your classroom?	Yes / No	Staff training programs are a systematic attempt to bring about change in the classroom practices of teachers, in their beliefs and attitude and in the learning outcomes of learners (Chadwick, 2008; Guskey, 1986; Patel & Khamis-Dakwar, 2005).
13	General comments	OE	Are there any further comments which may help me to understand your experiences and perceptions regarding the use of KWS?	… please specify	The relationship between belief in AAC and the use of AAC may be shaped by a complex interrelation of various personal and environmental factors (Hornby, 2015; Kent et al., 1998; Norburn et al., 2016; Rombouts et al., 2016a; Soto, 1997; Tönsing & Dada, 2016)

Note. C = closed; OE = open ended. 1 = (*never*), 2 = (*seldom*), 3 = (*sometimes*), 4 = (*frequently*), 5 = (*always*). AAC= augmentative and alternative communication; KWS = key word signing