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The validation process of questionnaires to assess motivation for and attitudes towards German as a learning a third language

Based on research in multilingual approaches to teaching, it is hypothesized that the learning process can be made more straightforward and less strenuous. The multilingual approach includes multilingual awareness-raising in order to profit from the synergies and exploit the resources many of the students already have through their prior language knowledge (Jessner et al., 2016).

The current paper aims to present the process of validating a motivational questionnaire set in the framework of the Directed Motivational Current (Dörnyei et al., 2014), designed to assess the motivational and attitudinal level of Hungarian 9th grade students during their first year of learning German as L3. The report includes the validation process of a classroom-setting questionnaire as well, intended to keep relevant variables as similar as possible in the intervention and the control groups in order to elicit the effects of multilingual awareness-raising as an intervention method.

Keywords: multilingual awareness-raising, third language teaching, motivation, attitude, dynamic systems approach

Introduction

Although the multilingual turn in classroom instruction emphasizes the positive effects of the cooperation between languages in foreign language teaching, most schools regard the integration of multiple languages into the teaching process as having a negative influence on learning (Demska, 2016: 22; Jessner, 2008: 39). Instructional practices often promote the extensive use of the target language in the foreign language classroom (Cummins, 2007: 225).

Regarding foreign language learning in institutional contexts, Hungary, with a primarily monolingual population, is in a unique situation considering foreign language teaching. In Hungary, the two most commonly taught and learned foreign languages (English and German) belong to a different language family (the Germanic branch of Indo-European languages) than the learners' mother tongue (Finno-Ugric). This unique situation raises questions, especially in third language teaching, when the students have already gained knowledge in English (Germanic), arguably the most widely spoken foreign language.

The *White Paper on the National Strategy for the Development of Foreign Language Teaching from Kindergarten to University* (EMMI, 2012) advises language learners and parents to take up learning German as a second language (henceforth L2) and English as a third language (henceforth L3), with the role of

German considered to be essential in terms of morphology, phonology and lexis as a prerequisite for learning English (Barabás, 2008). Being introduced to foreign languages in this order, the learner will have mostly positive experiences learning English as L3. This idea is based on the simpler grammatical structure and the higher language prestige of English. However, if the learner is introduced to these languages the other way round, namely English as L2 and German as L3, the student will experience a considerable loss of motivation towards learning the third language (EMMI, 2012; Gülay, 2007).

The present process is part of a longitudinal research project encompassing one school year, where the linguistic and motivational effects of multilingual teaching will be investigated and analysed. The current paper intends to present the validation process of questionnaires to assess the motivational level and attitudes of secondary school students toward learning German as L3, along with the validation process of a questionnaire about the classroom setting. In the first part, the situation of teaching foreign languages in Hungary is discussed, highlighting the difficulties that arise due to the low level of mutual intelligibility between Hungarian and the most commonly taught foreign languages, English and German. In a theoretical overview, theories of motivation concerning language learning and individual behaviour are summarised and discussed. It must be noted that the theoretical overview is not, by all means, exhaustive. Models and theories were selected by relevance to the current study, which is set in the framework of the Directed Motivational Current (Dörnyei et al. 2014). The present report adopts the Dynamic Systems approach to language teaching that highlights the dynamic interaction of complex (sub)systems, focusing on their adaptive, plastic, and elastic characteristics (Jessner & Allgäuer-Hackl, 2015). Motivation conceptualised by the dynamic approach is denoted as

> the dynamically changing cumulative arousal in a person that initiates, directs, coordinates, amplifies, terminates, and evaluates the cognitive and motor processes whereby initial wishes and desires are selected, prioritized, operationalized, and (successfully or unsuccessfully) acted out (Csizér, 2020: 25).

The second part covers the motivational questionnaire's validation processes and the questionnaire about the classroom setting along with each part's discussion, followed by the conclusion that highlights the challenges of decision-making on the part of the researcher in creating an adequate questionnaire which is as thorough as possible while economical as well.

The role of foreign languages in Hungary in foreign language teaching
Hungary's two most widely known foreign languages are English and German (Eurobarometer, 2012: 10, 21). They are learned mainly through lessons at school (Eurobarometer, 2012: 100). The *National Core Curriculum* advocates the development of a cross-cultural and cross-linguistic viewpoint, highlighting the

role of the teacher, who should be able to foster individual multilingualism in the classroom through building upon the students' language learning strategies, prior language knowledge, enhancing their language awareness and encouraging them towards future language learning (5/2020 Kormányrendelet, 2020: 314).

Because 99 percent of the population in Hungary uses Hungarian as the official language (Eurobarometer, 2012: 10), a language belonging to the Finno-Ugric language family, whereas the most common foreign languages are English and German, languages of Germanic origin (Eurobarometer, 2012: 21), Hungarian teachers of English as a foreign language (henceforth EFL) or German as a foreign language (henceforth GFL) face considerable challenges in sensitizing the students towards the similarities and differences between the most commonly taught foreign languages and the students' mother tongue in the process of L2 or L3 teaching.

The idea that bi- and multilingual language users use their existing knowledge when processing input from an unknown language is indisputable. Looking for similarities between new information and existing language knowledge in the mind is the most straightforward strategy to make sense of new language input (Jessner & Allgäuer-Hackl, 2015; Hofer, 2015; Jessner et al., 2016).

On the other hand, the Hungarian language, which belongs to the Finno-Ugric language family, only has close relatives that are situated genealogically and geographically relatively far away.

Therefore, we assume that the inherent mutual intelligibility (Gooskens & Van Heuven, 2021) between German and English, though being relatively low (Gooskens & Van Heuven, 2017), is still higher than the inherent mutual intelligibility between German and Hungarian, considering the fact that the latter two are unrelated (only the international vocabulary is shared). Suppose an L3 language teacher (provided that s/he has sufficient knowledge about the L2) is in a favourable position to exploit the students' prior language knowledge, as well as the higher mutual intelligibility between L2 and L3. In that case, s/he is supplied with an effective tool to facilitate the English or German learning process as an L3. Note, however, that only 5,6% of foreign language teachers are qualified to teach two Germanic languages (Imre, 1998). It should be mentioned that Imre's (1998) report is outdated. However, no more recent statistical information is available that would provide a clear picture of how many language teachers work in the Hungarian educational context, who can be considered proficient enough to exploit the resources deriving from the similarities between English and German in L3 teaching, where students already possess prior knowledge in one of these Germanic languages. Although graduates across the country as teachers of two foreign languages finish their studies in teacher education programmes, Gutiérrez (2017) draws attention to the lack of differentiation between L2 and L3 teaching in present teacher education programmes (Gutiérrez, 2017). Therefore, the model practice that is delineated in the Hungarian National Core Curriculum

is outweighed by the reality of the L3 classroom where, despite the fact that the students already possess prior knowledge of a Germanic language, English or German as L3 are taught in reference to the learners' L1 Hungarian.

Theories of motivation and individual behaviour

Taking the underlying mechanisms of language learning into consideration, various theories and aspects of motivation are discussed in the following section. Theories concerning motivation that explore the energisation and direction of behaviour range from mechanistic (that represents a passive view of the organism being influenced by environmental and physiological drives) to organismic (that emphasizes the active role of organisms with psychological drives and intrinsic needs) (Deci & Ryan, 1985: 3-4). An abundance of motivational theories and models have emerged in research literature explaining language learning motivation from various aspects (Dörnyei, 1996).

One of the most influential motivational theories in language learning was introduced as the Socio-educational Model (Gardner, 1985), which distinguishes instrumental and integrative motivation considering the immediate goal of learning a foreign language. Learners with instrumental motivation are interested in the practical purpose of learning a language, such as having better job perspectives or a higher salary. In contrast, learners with integrative motivation learn a language with the purpose of integrating themselves with the culture and the community of the target language by, e.g., being able to read a book in that specific language (Gardner & Lambert, 1972). The main critical issue of the model lies in its dichotomy, which is argued to be excessively restricted and static, whereas motivation itself is dynamic, as recognised by Gardner and McIntyre (1991).

Developed by Deci and his associates, the Self-Determination Theory focuses on the "sense of choice in initiating and regulating one's own actions" (Deci et al., 1989: 580). The theory recognises two types of motivation: extrinsic and intrinsic. Feelings of anxiety and pressure, and the urgency of work, are argued to be related to the involvement of extrinsic motivation in human behaviour (Deci & Ryan 1985:34). Implying values and conditions of social life through choices implicated by an individual's surroundings, school agendas call for extrinsic motivational incentives since learning processes are considered to require the use of various extrinsic principles (Connell & Ryan 1984). The learning process is facilitated by the student's natural curiosity and interest as a central intrinsic motivator since the innate desire to understand and explore can be observed since the earliest stages of human behaviour. The main manifestations of intrinsic motivation are the experience of interest and enjoyment, the perception of competence and self-determination, and internal causality for an individual's behaviour that does not require reinforcements for the maintenance of the behaviour itself. This natural and innate propensity to exercise one's capacity and

engage interest allows for a competent interaction with the environment (Deci & Ryan 1985). The notion of internalisation refers to the process of transforming outer regulation into internal regulation, through which attitudes, beliefs, or behavioural regulations are progressively transformed into a personal organisation, goal, or value. Self-determination represents the key issue behind the process during which attitudes manifest in direct actions toward effectively achieving an individual's goals (Deci & Ryan 1985). The Self-Determination Theory of motivation offers a unique approach for language teachers, according to which the focus in the classroom should not be on how a teacher can motivate the students but on how the learning group can create such conditions within which learners can motivate each other.

Dörnyei's (1994) motivational framework integrates (i) the integrative-instrumental aspect considering the learning goals and the choice of the target language as well as (ii) the intrinsic-extrinsic character of motivation. He considers the underlying dimensions of the complex, eclectic, and multifaceted construct of motivation in the foreign language classroom and argues that various components can be identified on three levels. The language level focuses on motives in alignment with the conveyed culture and community and the potential usefulness, including the learning goals and the choice of the target language. The learner level involves various cognitions and affects that form personality traits. The learner situation level incorporates course-, teacher-, and group-specific extrinsic and intrinsic motives (see Dörnyei, 1990; 1994).

The Goal-Setting theory developed by Locke and Latham (1990) emphasizes that goals serve as the purpose for human action; therefore, the theory focuses on the purposes that students perceive and can pursue as goals in order to achieve them. According to Locke and Latham (2002), goals affect the individual's performance by (a) directing effort and attention towards relevant activities, (b) aiding in regulating one's efforts in alignment with the difficulty of the task, (c) positively affecting persistence, and (d) leading to discovery and the use of task-relevant knowledge (Locke & Latham, 2002). Personal goal-setting is argued to be of uttermost importance in language learning, considering the progress' need for long-term engagement and commitment along with the establishment of short-term targets essential for sustaining the initial motivation (Ushioda, 2014). However, goal-setting alone does not provide sufficient persistence in learning. Language learning experience, target language-related experience, and other experiences interact on the metacognitive level, especially, when the learner's motivation is challenged through problems or difficulties during the learning process (Ushioda, 2014). Meaningful short-term goals, or "proximal self-motivators" (Ushioda, 2014: 36), are argued to aid the learner's self-evaluation and thus allow for developing their metacognitive awareness concerning their abilities, skills, and knowledge in the motivational rationale set by long-term targets (Ushioda, 2014).

Accepted by practitioners looking for ways of fostering positive experience, e.g., in formal schooling, the Flow Theory (Csíkszentmihályi, 1990) describes the optimal experience. The state of flow is characterised as dynamic equilibrium, with unusually clear goals and immediate feedback, where all senses, intentions, thoughts, and feelings focus on the target. Consequently, the activity becomes intrinsically rewarding or autotelic, with no necessity for extrinsic rewards of any kind. This clear interaction of mind and body is denoted as an optimal experience, or flow, referring to the sensation accompanying the state of task resolution (Csíkszentmihályi, 1990). Conditions of flow include a balance between the perceived challenges and perceived action capacities, where the individual engages in challenges that stretch one's capacities at an appropriate level. Research on flow highlights the dynamic system of the individual and environment where the flow experience is created and developed by the person and the situation. Each action at any moment is highly responsive to the immediate previous action with emergent motivation resulting from the dynamic interaction in an open system (Nakamura & Csíkszentmihályi, 2014).

The Theory of Planned Behaviour is based on the idea that behaviour is regulated by motivation and ability, or in other words, on intention and behavioural control. In addition to the Theory of Reasoned Action (Ajzen & Fishbein, 1977), the Theory of Planned Behaviour highlights that it is not the actual behavioural control that has an impact on the intentions and actions of the individual, but the perception of behavioural control (i.e., the perceived degree of difficulty of performing the behaviour) which, together with behavioural intention, is argued to predict behavioural achievement directly (Ajzen, 1991). The theory incorporates attitude towards the behaviour (i.e., positive or negative evaluation or appraisal of the behaviour) and subjective norm (i.e., the perception of social pressure for performing or not performing the behaviour) as determinants of intention. This theory is considered remarkably useful in understanding the underlying factors of behaviour, or in implementing interventions in order to change the behaviour in question (Ajzen, 1991).

The motivational role of Mental Self-Imagery was described by Paivio (1985), who argued that imaging the performance of specific activities enhances the efficiency and frequency of overt practice and persistence, thus contributing to motivated behaviour. Although receiving limited attention in psychology literature, self-imagery is claimed to influence intrinsic motivation positively through self-efficacy mechanisms (McAuley et al., 1991), self-evaluative mechanisms (Moritz et al., 1996) as well as goal-setting mechanisms (Weinberg et al., 1993). The notion of self-efficacy was first described by Bandura (1982) and denoted as the individual's belief about being effective in attaining the desired goals along with surmounting challenges (Bandura, 1982).

Highlighting the temporal underpinning of human life, Lewin's (1951) Time Perspective Model emphasizes the importance of "the totality of the individual's

views of his physiological future and physiological past existing in the given time" (Lewin, 1951: 75) on current behaviour. Zimbardo and Boyd (2015) argue that important judgements, actions, and decisions are dynamically influenced by recalling analogous situations along with benefits and disadvantages or by hypothetical decisions deriving from expectations and anticipations. The educational environment is argued to be future-oriented (Zimbardo & Boyd, 2015) since, in education, planning for and achieving future goals is of uttermost interest to educators and learners as well. Future time perspective is asserted to influence behaviour, decisions, and actions through the behaviour's predicted relations with considerations of consequences, the anticipation of reward, conscientiousness, and preference for consistency (Zimbardo & Boyd, 2015).

Framework - the Directed Motivational Current

The role of motivation in the language learning process is indisputable. Numerous research are concerned with language globalisation, and the popularity of learning English as a foreign language (Csizér & Dörnyei, 2005; Csizér & Lukács, 2010). The dynamic approach to foreign language learning highlights that different language systems present in the multilingual mind have effects, on the one hand, on the learning process and development of additional languages and, on the other hand, on the development of the overall multilingual system of the learner (Dörnyei, 2009). Dörnyei et al. (2016) highlight the lack of an integrated and holistic analysis concerning the motivational background of sustained behaviour. The Directed Motivational Current (henceforth DMC) is regarded as an optimal scheme for engaging in a continuous, longitudinal project (Dörnyei et al., 2016).

The concept of the DMC introduced by Dörnyei, Muir, and Ibrahim (2014: 9) refers to a powerful and unique motivational drive supporting and stimulating the long-term learning process. The DMC incorporates various structures of motivational thinking, such as Dynamic Systems Theory, Motivational Self System as well as Future Time Perspective, and is argued to represent a useful didactic tool in motivating the language learner (Lasagabaster et al., 2014). Emerging within a facilitating behavioural structure, with the energy level constantly gaining momentum through elevated emotionality resulting from the perception of ongoing progress towards a clearly visioned and personally significant goal, including a set of sub-goals, the achievement of which generates positive feedback, the DMC is theorised to enable the learner to push beyond boundaries and achieve long-term goals (Dörnyei et al., 2014). This novel construct underlies a variety of motivational theories, including the goal-setting theory (Locke & Latham, 1990), the self-determination theory (Deci & Ryan, 1985), the flow theory (Csíkszentmihályi, 1990), along with the theory of planned behaviour (Ajzen, 1988), as well as theories of self-imagery and vision (Paivio, 1985) and future time perspective (Zimbardo & Boyd, 2015).

The dynamic systems approach emphasizes the critical tenet of the DMC concerning the emerging behaviour of a system out of the interaction of its various and constantly changing components. However, the characteristic feature of dynamic systems, namely its non-predictability, does not seem to apply to the DMC, taking the goal-oriented pathway of this regulatory process into consideration (Dörnyei et al., 2014).

The rationale behind the choice for the framework of the DMC was the attempt to consider the combined impact of various factors that influence the learning process, along with the aim to enquire whether a novel teaching method (see Horváth & Jessner, 2020) may trigger the intense motivational drive that helps students to override the complications they face when they are confronted with learning a grammatically more complex language as L3.

Methods of data collection

The following section reports on the questionnaires used for data collection, highlighting the piloting and validation process of a motivational questionnaire and a questionnaire about the classroom setting.

Motivational questionnaire

In order to obtain data about the participants' attitudes and motivation, an initial questionnaire and follow-up questionnaires are planned to be administered monthly throughout the first school year of the participants' learning process. The content, language level, tone, and length of the questionnaire were established in alignment with the participants' interest, bearing strength, and concentration capacity (as advocated by Falus, 2004: 185). The language of the questionnaire was the students' L1, Hungarian. Considering the length of the questionnaire, special attention was given to the fact that a secondary school classroom session is limited to 45 minutes. Given the longitudinal nature of the research, a data collection method had to be chosen that would interfere with the students' everyday school activities the least. The tasks were designed in a paper and pencil format, considering that the students were most familiar with this type of testing in a controlled environment.

The validation process was designed in alignment with the stages proposed by Dörnyei (2007; 2010) for piloting questionnaires. After the pooling of the items from relevant literature (see Deci & Ryan, 1985; Ajzen, 1988; Csíkszentmihályi, 1990; Dörnyei, 2009; Dörnyei et al., 2014; 2016; Lasagabaster et al., 2014; Ushioda, 2014), the questionnaires went through an expert judgement process with the inclusion of academics who are qualified in the field. The process resulted in the rewording and clarification of specific items. The final questionnaire was distributed to teachers of GFL, who administered it to 97 students in the 9-12th grade in a secondary school in Székesfehérvár. In order to safeguard anonymity, participants were required to give a nickname or initial.

The first part of the questionnaire (see Appendix 1) was included only in the initial questionnaire. Here, the first four major open- and closed-ended questions and the three minor questions were intended to elicit information about (i) the background of the students concerning their language use and (ii) their choice of L3. The fifth major question was aimed at revealing (iii) the perception of possible future problems of students starting to learn German.

The second part of the questionnaire focused on the motivational level and attitude of the respondents concerning learning German as L3 (see Appendix 2). In order to estimate the participants' motivational level, 24 positive statements were formulated, to which the responses had to be marked on a five-point Likert scale each. The students were asked to mark their opinion for each of the 24 statements on a five-point scale ranging from *"strongly agree"* to *"strongly disagree."* Since the statements were positive, the scales for each item were converted to values 5 (*"strongly agree"*), 4 (*"partially agree"*), 3 (*"neither agree nor disagree"*), 2 (*"partially disagree"*), 1 (*"strongly disagree"*). The questions of the motivational questionnaire are presented in English and Hungarian in Appendix 2.

In order to specify the information about the subjects' attitudes concerning this particular object, Osgood attitude scales were included. The subjects were provided with bipolar adjectival scales against which they could characterize the presented concept. The individual's task was to indicate his or her association or each item. A small set of 8 bipolar adjectives and statements were established. In order to keep the data size manageable, each adjective pair was presented at the opposite ends of a seven-point scale, the meaning of which (*definitely, very, a bit* towards both ends, with *cannot decide* as a resting point in the middle) were included in the table itself. In order to ensure that the items included in the scale reflect the disposition of interest, 45 students were asked to compile a list of adjectives related to learning languages. The attitude scale was constructed from the responses considered good representatives of the dispositional domain (Ajzen 1988: 13).

The informants had to mark their attitude along eight scales: interesting-boring, simple-difficult, useful-not useful, comprehensible-complicated, I like it-I do not like it, clear-unclear, important-unimportant, and contemporary-old- fashioned. Three bipolar adjectives (useful-not useful, important-unimportant, contemporary-old fashioned) were designed to reveal the students' perceived prestige of the German language, which may also influence their language choice and attitude towards learning this additional language (Lasagabaster & Huguet, 2007). It should be noted that the responses represent the participants' overall attitude only in their totality. The attitude score, computed by summarizing responses to all items, reflects the informants' overall attitude (Ajzen, 1988: 12-13).

The last question was aimed to retrieve additional information the students might consider important concerning the language or the learning process. Once the initial motivational factors were elicited, the follow-up questionnaires focused on the respondents' motivation levels and attitudes concerning learning German as L3.

Discussion

The number of responses in each of the scale positions for each item is presented in Table 1.

Table 1. Number of responses in the motivational questionnaire broken down by question and scale position. N respondents = 97.

Motivational questionnaire	strongly disagree	partially disagree	neither agree nor disagree	partially agree	strongly agree
Q1	0	0	25	11	61
Q2	0	12	0	13	72
Q3	0	23	36	13	25
Q4	0	25	22	14	36
Q5	10	34	4	35	14
Q6	0	23	44	16	14
Q7	0	12	17	54	14
Q8	11	24	22	37	3
Q9	0	22	37	38	0
Q10	0	35	13	48	1
Q11	0	12	2	45	38
Q12	12	12	24	36	13
Q13	0	0	22	49	26
Q14	0	11	25	48	13
Q15	0	11	3	47	36
Q16	0	0	35	50	12
Q17	1	23	11	60	2
Q18	1	0	24	46	26
Q19	0	0	24	57	16
Q20	0	11	14	60	12
Q21	0	34	14	36	13
Q22	0	0	46	36	15
Q23	0	12	25	35	25
Q24	0	23	47	13	14
total	**35**	**359**	**536**	**897**	**501**

In order to test for the normal distribution of the responses, the Kolmogorov-Smirnov test (K-S test for short) was administered. Checking for normal distribution means exerting the normal behaviour of the variables, that is, to what extent data tend to cluster around the mean. The K-S test reports that the distribution of the responses in each of the scale positions is significantly non-normal D (120) = .15, *p* < .05. The histogram shows a skewness of .757 and a kurtosis of -.199. It should be noted that the sampling size is reasonably significant. When running the K-S test for each item separately, the distribution of responses is significantly non-normal only for items 2 and 20.

Both items, *"I spend time every day learning German and improving my German language skills"* (item 2) and *"I have managed to include learning German into my daily routine"* (item 20), are concerned with the engagement with the target language daily. Both items are also negatively skewed above a value of 1.9, revealing relatively high kurtosis values over 4.08. This result is likely to reflect that the majority of the students manage to learn and practice German daily. However, data retrieved from these two items do not represent an unexpected outcome since the participants were chosen from 9th to 12th grade, meaning that most have regularly learned German for more than one year in an institutional context. The course schedule with four lessons per week plays a significant role in this outcome since participating in the lessons, doing homework, and practicing for upcoming tests or presentations require (almost) daily engagement with the language.

To determine the conceptual validity of the chosen items, i.e., that the items were reliable measures of the constructs they were intended to measure, a principal component analysis (henceforth PCA) was conducted on the 24 items with oblique rotation (Direct Oblimin). The Kaiser-Meyer-Olkin measure verified the sampling adequacy for the analysis, KMO = .89. Bartlett's test of sphericity χ^2 (276) = 4325.34, *p* < .001, indicated that correlations between items were sufficiently large for PCA. An initial analysis was run to obtain eigenvalues for each component. The scree plot of the PCA was slightly inconclusive and showed inflexions that would justify retaining 6 or 8 components. The dichotomy of short explains the ambiguity of the scree plot - (item 1) and long-term goals (elicited by items 7, 13, and 19) as well as by the difference between items eliciting instrumental- (item 6) or integrative motivation (items 12, and 18) to learning German as L3, which added two more linear components to be considered within the data. In order to arrive at a justified decision on how to treat the problem, Kaiser's criterion was employed, which requires eigenvalues above 1 for each underlying dimension to be considered statistically significant. Only six out of the eight components had eigenvalues over Kaiser's criterion of 1. Given the convergence of the scree plot and Kaiser's criterion on six components, this is the number of components retained in the final analysis. The retained components, in combination, explained 94.88% of the variance.

After analysing the factor loadings of each item for the components (see Appendix 4), all six components were labelled. Table 2 reveals a comprised overview of the eigenvalues and the % of variance explained along with the alphas for each component.

Table 2. Validity of the components in the motivational questionnaire

Component	Eigenvalue	% of variance	α
Goal-orientedness	8.478	39.237	.766
Positive emotional loading	4.246	19.652	.823
Facilitative behavioural routine	3.101	14.353	.797
Perceived behavioural control	2.136	9.884	.816
Vision-orientedness	1.490	6.895	.730
Perception of progress	1.010	3.855	.867
total		94.835	

Since all the alpha values are above the recommended .70, the Likert scales were considered internally consistent. The alpha value for the whole questionnaire computed over 24 items was .691. The alpha values confirmed the internal consistency and, thus, the reliability of the questionnaire.

According to the statistical analyses of the dataset, it is confirmed that investigating the long-term motivation of German as L3 learning in the framework of the DMC can be operationalised through the present questionnaire that focuses on the constantly changing underlying dimensions of emerging behaviour of a system. After the K-S test and PCA, items 1, 2, 6, and 20 were considered excluded from the questionnaire. However, when eliciting, the alpha values of the responding components did not significantly increase. After careful consideration concerning the issues addressed by the items in question, it was decided to retain these items in the questionnaire, which according to the statistical analyses, was confirmed to represent a valid and reliable tool for eliciting motivation considering German as L3. For reference to the statements of the questionnaire, see Appendix 2, which includes the original statements in Hungarian and the English translation. Future development of the questionnaire may welcome additional statements to elicit the DMC's underlying factors in more detail.

Questionnaire about the classroom setting
Since the research project (see Horváth & Jessner, 2020) deals with a linguistic phenomenon, additional factors besides raising Multilingual Awareness (henceforth MLA) are not considered to play a significant role in the process. In order to ensure that the linguistic improvement of the participants along with the attitude and motivational changes is due to the involvement of MLA-raising activities, a questionnaire about the classroom setting (presented in Appendix 3) was administered concerning (i) the level of creating basic motivational

preconditions through appropriate teacher behaviour, creating of stimulating, enjoyable and supportive classroom atmosphere as well as establishing appropriate group norms, (ii) the level of generating initial motivation by establishing realistic learner beliefs and the inclusion of relevant materials. Responses in the questionnaire provide information about the students' perception of the teacher's personality, feedback, goal setting, learning environment and classroom content (Dörnyei, 2001), and the overall motivational classroom setting.

On a five-point Likert scale, the informants were asked to mark their opinion to five positive statements concerning teacher personality, feedback, classroom atmosphere, teacher goal setting, instruction, and content. The responses to verbal categories were converted to numerical information the same way as in the case of the motivational questionnaire with values 5 (*"strongly agree"*), 4 (*"partially agree"*), 3 (*"neither agree nor disagree"*), 2 (*"partially disagree"*), 1 (*"strongly disagree"*).

After filling in the scale, the questionnaire format allowed the responders to include any additional opinions or thoughts about the classroom setting—the number of responses in each scale position for each item I presented in Table 3.

Table 3. Number of responses in the questionnaire about the classroom setting broken down by question and scale position. N respondents = 92.

Questionnaire about the classroom setting	strongly disagree	partially disagree	neither agree nor disagree	partially agree	strongly agree
Q1	4	5	25	20	38
Q2	0	12	40	35	5
Q3	12	0	22	44	14
Q4	0	20	23	27	22
Q5	0	10	19	51	12
Q6	0	4	17	39	32
Q7	4	22	13	31	22
Q8	6	1	18	44	23
Q9	6	0	23	31	32
Q10	0	9	17	22	44
Q11	8	20	23	27	14
Q12	12	8	19	39	14
Q13	0	25	29	33	5
Q14	4	17	23	43	5
Q15	0	6	26	42	18
Q16	7	7	26	29	23
Q17	0	7	33	33	19

Q18	0	12	15	53	12
Q19	0	4	45	28	15
Q20	0	11	18	28	35
Q21	8	4	25	24	31
Q22	0	15	16	48	13
Q23	8	8	17	38	21
Q24	0	8	21	25	38
Q25	0	8	26	26	32
Q26	0	0	40	28	24
Q27	0	3	19	59	11
Q28	0	4	30	46	12
Q29	6	10	31	33	12
Q30	0	15	7	52	18
total	**85**	**275**	**706**	**1078**	**616**

The distribution of the responses is displayed in Figure 2.

Checking the normal distribution of the responses, the K-S test reports that the distribution of the responses in each of the scale positions is significantly non-normal D (150) = .098, $p < .05$. The histogram shows a skewness of .563 and a kurtosis of -.397. Note that the sampling size is reasonably large, just as in the case of the motivational questionnaire. When running the K-S test for each item separately, the distribution of responses is significantly non-normal only for items 4 and 22.

Both items, *"The teacher regularly determines short-term goals"* (item 4) as well as *"The teacher explains how we can achieve the determined short-term goals"* (item 22), cover the short-term goal setting from the side of the teacher. Both items are negatively skewed with values over 1.5, revealing relatively high kurtosis values over 3.12. The results are likely to reflect that the teachers of the language groups participating in the administration of the questionnaire put a fairly strong emphasis on regularly examining and checking the German knowledge of their students with clear instructions on what part (e.g., which vocabulary, which grammatical part) is going to be on the written or oral tests or exams along with instructions how to best prepare for them. Imposing these "checkpoints" as explicitly set short-term goals are prescribed by the local syllabus, and clear instructions reduce exam anxiety and create transparency for the parents. Due to the subjective norm according to regulations of the local syllabus as well as resulting from parental expectations, the majority of teachers employ the tactics of giving previous notice on upcoming tests and guiding their students towards the successful achievement of which the students are explicitly aware.

Conceptual validity was elicited by conducing PCA on the 30 items with oblique rotation (Direct Oblimin). The Kaiser-Meyer-Olkin measure verified the sampling adequacy for the analysis, KMO = .67. Bartlett's test of sphericity χ^2 (435) = 3657.84, $p < .001$, indicated that correlations between items were significantly large for PCA. The initial analysis revealed that six components had eigenvalues over Kaiser's criterion of 1 and, in combination, explained 79.78 % of the variance. The scree plot showed inflexions that justified retaining six components. After analysing the factor loadings of each item for the components (see Appendix 5), all six components were labelled. Table 4 reveals a comprised overview of the eigenvalues and the % of variance explained along with the alphas for each component.

Table 4. Validity of the components in the questionnaire about the classroom setting

Component	Eigenvalue	% of variance	α
Instruction	7.317	24.329	.908
Teacher goal setting	5.345	17.774	.860
Teacher personality	5.024	16.705	.779
Classroom atmosphere	2.295	9.727	.830
Content	2.293	7.626	.817
Feedback	1.088	3.619	.879
total		79.781	

Since all the alpha values are above the recommended .70, the Likert scales were considered internally consistent. The alpha value for the whole questionnaire (containing all 30 items) was .721. The statistical analyses reported above confirm that the questionnaire about the classroom setting is a valid and reliable tool for measuring the underlying external factors of motivation in the classroom.

Conclusion

The present study intended to report on the piloting and validation process of a motivational questionnaire to assess the motivational and attitude levels of 9th grade Hungarian secondary school students towards learning German as L3, as well as the piloting and motivation process of a questionnaire about the classroom setting. Both questionnaires are designed as parts of a longitudinal teaching project, during which linguistic and motivational effects of multilingual teaching are assessed. The questionnaire about the classroom setting is aimed at ensuring that other external factors besides MLA-raising are kept at the same level in the instructional and the control groups.

Since motivation is a multifaceted phenomenon, developing motivational questionnaires represents a tedious process where various motivational thinking factors must be addressed. The Directed Motivational Current covering a variety of these factors is considered to represent an adequate framework to assess motivation for long-term learning processes, in this case, specified to motivation

for learning German as L3. Considering that this tool for data collection was developed to be administered monthly during a school year, the questionnaire had to be kept economical to ensure that the students did not get bored in the process, thus providing adequate data during the project.

The first part of the paper took the instructed foreign language learning situation in Hungary into consideration, underlining the struggles resulting from low mutual intelligibility between English or German as foreign languages at school and Hungarian as the learners' mother tongue. The second part reports on the piloting and validation methods of the questionnaires.

Following the systematic process designed for piloting motivational questionnaires (Dörnyei, 2007, 2010) and the chosen statistical analyses for validation provided a reliable basis for creating the current tool for data collection.

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Appendix

Appendix 1. Open and closed ended questions in the initial questionnaire

1. Milyen nyelven beszéltek otthon? What language do you speak at home?
2. Milyen nyelven beszélsz a barátaiddal? What language do you speak with your friends?
3. Milyen nyelvet tanultál eddig az iskolában? What language(s) have you studied at school so far?
4. Te választottad a németet második idegen nyelvnek? Was it you, who has chosen German as your second foreign language?

    □ igen   □ nem

    a. Ha igen, mi motivált a választásod során? If so, what motivated your choice?

    b. Ha nem, ki segített a döntésben? If not, who helped you make this decision?

    c. Milyen érvek alapján döntöttetek? What arguments did you base your decision on?

    Szerinted lesznek kihívások vagy problémák a német nyelv tanulása során? Do you think there will be challenges or problems in learning German?

    □ igen   □ nem

    Kérlek, indokold a válaszodat. Please explain your answer.

Appendix 2. Motivational questions (strongly agree… strongly disagree)

	English	Hungarian
Long- and short-term goals		
1.	Among my short-term goals it is relevant, that I obtain good grades in the German lessons.	Rövid távú céljaim között meghatározó, hogy jó jegyeket szerezzek a német nyelvi tanórákon.
7.	Taking the B2 level language exam in German language is among my long-term goals.	Hosszú távú céljaim között szerepel, hogy középfokú (B2) nyelvvizsgát tegyek német nyelvből.
13.	Spending a longer period of time in a German-speaking country (as an employee or as a tourist) is among my long-term goals.	Hosszú távú céljaim között szerepel, hogy német nyelvterületen töltsek el hosszabb időt (munkavállalóként, turistaként).
19.	Taking the final exam in German language as an optional subject is among my long-term goals.	Hosszú távú céljaim között szerepel, hogy érettségi vizsgát tegyek német nyelvből választható tantárgyként.
Facilitative behavioural routine		
2.	I spend time every day learning German and improving my German language skills.	Minden nap foglalkozom a német nyelv tanulásával és német nyelvi képességeim fejlesztésével.
8.	I regularly devote time to obtain new information in German about things I am interested in.	.Rendszeresen fordítok időt arra, hogy német nyelven szerezzek új információkat az engem érdeklő dolgokról.
14.	I practice German voluntarily, besides the compulsory tasks.	A kötelező feladatokon kívül önállóan is gyakorlom a német nyelvet.
20.	I have managed to include learning German into my daily routine.	A német nyelv tanulását sikerült szokásként beépítenem a napirendembe.
Positive emotional loading		
3.	I learn German with joy.	Örömmel tanulom a német nyelvet.
9.	Learning and practicing German make me feel good.	Jól érzések töltenek el, amikor a német nyelvet tanulom, gyakorlom.
15.	I look forward to the upcoming German lesson with excitement.	Pozitív izgalommal várom a következő németórát.
21.	Acquiring new skills through learning German enthuses me.	Lelkesít, hogy a német nyelv tanulásán keresztül egy új képességre tehetek szert.
Perceived behavioural control of participant		
4.	I can achieve the expected level at the quizzes and tests in the German lessons with ease.	Könnyen tudom teljesíteni az elvárt szintet a német tanórai számonkéréseken.
10.	I feel that I have good skills to acquire German.	Úgy érzem, hogy jó képességekkel rendelkezem a német nyelv elsajátításához.
16.	Completing the tasks in the German lesson does not cause difficulties.	Nem okoz nehézséget az egyes feladatok teljesítése a németórán.
22.	There are no obstructive factors concerning learning German that I could not tackle.	Úgy érzem, hogy nincs olyan akadályozó tényező a német nyelv tanulásával kapcsolatban, amit ne tudnék legyőzni.

Perception of progress		
5.	I am making good progress in acquiring my goals concerning German.	Jó úton haladok a német nyelvvel kapcsolatos céljaim eléréséhez.
11.	I am able to express myself in German better all the time.	Egyre jobban tudom kifejezni magam német nyelven.
17.	I feel that my German language skills are getting better all the time.	Érzem, hogy a német nyelvi képességeim egyre jobban fejlődnek.
23.	I feel that I am able to meet the challenges during German language acquisition successfully.	Úgy érzem, hogy sikerrel teljesítem a kihívásokat a német nyelv tanulása során.
Vision-orientedness		
6.	I can imagine, that I will work in a German speaking country in the future.	Elképzelhetőnek tartom, hogy a jövőben német nyelvterületen dolgozzam.
12.	Next time when I visit a German speaking country, I will be able to get along well with using the German language.	Szerintem amikor legközelebb német nyelvterületre utazom, jól el tudok majd igazodni a német nyelv használatával.
18.	In case of having German friends, I will be able to keep in touch with them using the German language.	Elképzelhetőnek tartom, hogy ha német barátaim lesznek, akkor jól fogom velük tudni tartani a kapcsolatot németül.
24.	I can imagine that I will often use the German language in the future.	Elképzelhetőnek tartom, hogy a jövőben gyakran fogom használni a német nyelvet.

Appendix 3. Questions about the classroom setting (strongly agree…strongly disagree)

	English	Hungarian
Teacher personality		
1.	The teacher has a good sense of humour.	A tanárnak jó humorérzéke van.
7.	The teacher always comes to the class well-prepared.	A tanár mindig jól felkészülten jön órára.
13.	The teacher is concerned with our language needs.	A tanárt érdeklik a nyelvi szükségleteink.
19.	The teacher shares his/her interest about the German language.	A tanár megosztja velünk a saját érdeklődését a német nyelvvel kapcsolatosan.
25.	The teacher shows his/her enthusiasm about the language.	A tanár kimutatja lelkesedését a német nyelv iránt.
Feedback		
2.	The teacher evaluates our work along clear criteria.	A tanár világos értékrend szerint értékeli a munkánkat.
8.	The teacher regularly gives feedback about our work.	A tanár rendszeresen ad visszajelzést a munkánkról.
14.	The teacher gives us guidelines on how to correct our mistakes and errors.	A tanár útmutatást ad, hogy hogyan tudjuk javítani a hibáinkat.
20.	The feedback is comprehensible.	A tanár visszajelzése érthető.
26.	The teacher encourages us to contribute to the given topic in class.	A tanár bátorít minket, hogy aktívan hozzászóljunk az adott témához a tanóra során.

Classroom atmosphere		
3.	It is natural, that we make mistakes in class.	Az órán természetes, ha hibákat vétünk.
9.	The teacher corrects our linguistic errors patiently	A tanár türelmesen javítja a nyelvi hibáinkat.
15.	The classroom atmosphere is tolerant.	A tanóra hangulatára a tolerancia jellemző.
21.	The teacher encourages us to cooperate in group- or pair-work.	A tanár bíztat az együttműködésre a csoportos vagy páros feladatok során.
27.	The teacher regularly gives us tasks to be completed in small groups.	A tanár rendszeresen ad kis csoportban végzendő feladatokat.
Teacher goal setting		
4.	The teacher regularly determines short-term goals.	A tanár rendszeresen határoz meg rövid távú célokat.
10.	The short-term goals determined by the teacher are accomplishable.	A tanár által meghatározott rövid távú célok elérhetőek.
16.	The short-term goals are challenging.	A tanár által meghatározott rövid távú célok pozitív kihívást jelentenek.
22.	The teacher explains, how we can achieve the determined short-term goals.	A tanár elmagyarázza, hogy hogyan érhetjük el a tanár által meghatározott rövid távú célokat.
28.	It is clear to me, how the short-term goals contribute to the achievement of my long-term goals concerning the German language.	Számomra világos, hogy a rövid távú célok hogyan járulnak hozzá a német nyelvvel kapcsolatos hosszú távú céljaim megvalósításához.
Instruction		
5.	The teacher explains everything in a comprehensible way in the class.	A tanár érthetően magyaráz az órán.
11.	The instructions of the teacher are clear.	A tanár utasításai világosak.
17.	After the explanation, the teacher gives us time to ask questions about the given material.	A tanár a magyarázat után ad időt arra, hogy kérdéseket tegyünk fel az adott tananyagrésszel kapcsolatban.
23.	The teacher uses examples to illustrate the given linguistic structures.	A tanár példákat használ, hogy illusztrálja a tanított nyelvi struktúrákat.
29.	The teacher gives us guidelines on how to do the assigned tasks.	A tanár útmutatást ad abban, hogy hogyan csináljuk meg a feladott munkát.
Content		
6.	The pace of teaching is convenient for me.	A tanítás sebessége megfelelő a számomra.
12.	The teacher teaches material that is relevant to us.	A tanár olyan tananyagot tanít, ami releváns a számunkra.
18.	The tasks concerning the teaching material are challenging.	A tananyaghoz kapcsolódó feladatok pozitív kihívást jelentenek a számunkra.
24.	The tasks concerning the teaching material are interesting.	A tananyaghoz kapcsolódó feladatok érdekesek.
30.	The teacher encourages us to conduct our own research (e.g. on the internet) considering things related to German language.	A tanár bíztat minket, hogy saját magunk is kutatást végezzünk (pl. interneten) a német nyelvvel kapcsolatos dolgokról.

Appendix 4. Factor analysis of the items concerning the motivational questionnaire. Factor loadings below .50 not included.

Motivational questionnaire	1	2	3	4	5	6
Q1	.65					
Q2		.52				
Q3			.77			
Q4				.72		
Q5					.82	
Q6						.74
Q7	.75					
Q8		.72				
Q9			.60			
Q10				.78		
Q11					.57	
Q12						.62
Q13	.85					
Q14		.56				
Q15			.55			
Q16				.58		
Q17					.73	
Q18						.71
Q19	.85					
Q20		.73				
Q21			.75			
Q22				.62		
Q23					.72	
Q24						.71

Appendix 5. Factor analysis of the items concerning the questionnaire about the classroom setting. Factor loadings below .50 not included.

Questionnaire about the classroom setting	1	2	3	4	5	6
Q1	.91					
Q2		.51				
Q3			.84			
Q4				.55		
Q5					.82	
Q6						.52
Q7	.72					
Q8		.84				
Q9			.95			
Q10				.78		
Q11					.91	
Q12						.92
Q13	.53					
Q14		.81				
Q15			.52			
Q16				.61		
Q17					.71	
Q18						.72
Q19	.56					
Q20		.58				
Q21			.54			
Q22				.62		
Q23					.63	
Q24						.66
Q25	.87					
Q26		.55				
Q27			.51			
Q28				.75		
Q29					.66	
Q30						.94