

A SYNTHESIS OF THEORETICAL FRAMEWORKS ON MULTILINGUAL EDUCATION FOR SCHOOL LEADERS

Laura Kirss, Ülle Säälük, Margus Pedaste, and Äli Leijen

University of Tartu

Abstract. As a result of the intensification and diversification of migration processes, education decision-makers across the globe find themselves facing issues of multilingual education. Coupled with demands for inclusive education for all children, education professionals, especially school leaders, are challenged with finding the best solutions possible. Moreover, school leaders lack useful evaluation tools for reviewing or revising multilingual education in the turbulent times. Stemming from the practical need for assistance in the adaptation process and the gap in research, this article proposes a new synthesized conceptual framework for analysing and evaluating the current status and characteristics of multilingual education. Firstly, the article reviews the available approaches to multilingual education and provides an analysis of them. Secondly, based on the synthesis of results, an elaborated conceptual framework in the format of a guidance tool is introduced to assist school leaders in their work with multilingual education.

Keywords: multilingual education, multilingual school, school leaders, conceptual framework, literature review

DOI: <https://doi.org/10.3176/tr.2020.1.02>

1. Introduction

Over the last 45 years, the number of migrants in the world has tripled – there are around 244 million people living in a country other than their country of birth (International Organization for Migration 2017). In addition to increasing intensity of overall migration, migration patterns are diversifying, e.g. rise in the number of countries of origin, changing migration channels, etc. (Meissner and Vertovec 2015). Moreover, migration is affecting a larger scale of countries. Migration flows are not only directed towards the so-called traditional migration destinations (e.g. USA, Germany) (International Organization for Migration 2017), but are shifting

towards non-typical receiving countries as well. For instance, Central and Eastern European countries that have thus far been mostly unattractive destinations have experienced remarkable increases in foreign-born population, including refugees (European Commission 2017; OECD 2017). This transformation in migration, also termed ‘super-diversity’ (Vertovec 2007), has important implications on policy – country policies and regulations need to accommodate the issues arising from the heterogeneity of populations.

Education is one of the public policy areas that is commonly affected by migration. Not only are children moving together with adult migrants but a large proportion of children are moving on their own. E.g. by 2016, the number of unaccompanied and separated children applying for asylum in Europe had risen six-fold from 2010 to 66 thousand annually (UNICEF 2017). In OECD countries, the share of students with an immigrant background has risen by six percentage points on average with Luxembourg, Switzerland and Ireland at the top with 15-20 percentage point increase (Forghani-Arani, Cerna, and Bannon 2019). Despite the fact that education is perceived to be the critical domain of integration, the role of school leaders in this process has not been under great attention (Devine 2013). Still, Faas, Smith, and Darmody (2018:459) have recently concluded that school leadership has been recognized as “an important concept internationally in addressing increasing migration-led diversity”. Also, the emergence of a research field called ‘Culturally Responsive School Leadership’ is an evidence of increased attention to the field (see for example Johnson 2012).

Devine (2013), researching practicing leaders in newly multi-ethnic schools in Ireland, demonstrates the tensions school leadership is experiencing under the ‘new’ situation: on the one hand, they have to negotiate the community dynamics from inside and outside schools and on the other, accommodate national-level policies on diversity. School leaders find themselves in a situation where they need to balance outside pressures while still holding on for a particular vision for their school. Consequently, it is relevant to ask: Are school leaders properly equipped to address the increased diversity at schools? What conceptual frameworks are available to help them systematically analyse the changed situation at school and guide them in the revision or adaptation process of current education? There seems to be a critical knowledge gap in this aspect.

What knowledge is available on multilingual education for a school leader who is in need of addressing the linguistic diversity in his/her school? Firstly, the effectiveness research on multilingual education in different contexts has demonstrated that teaching and learning in multiple languages works for minority students (Admiraal, Westhoff, and Bot 2006; Baker, Basaraba, and Polanco 2016; Cenoz 2008; Dicks and Genesee 2017; Lo and Lo 2014; Reljic, Ferring, and Martin 2015; Thomas and Collier 1997; Troike 1978; Valentino and Reardon 2015; Wright and Baker 2017). Secondly, the most effective programmes tend to be those that offer two-way developmental bilingual education followed by those offering one-way developmental bilingual education together with second language taught through academic content (Thomas and Collier 1997). Thirdly, a key factor

in the effectiveness of multilingual programmes has been shown to be the use of students' first language (Guglielmi 2008, 2012; Thomas and Collier 1997) but also learning strategies matter (Ardasheva 2016). The PRISM model developed by Thomas and Collier underlines the importance of simultaneous development of both language skills (L1+ L2) complemented by academic and cognitive development in all languages together with the social and cultural processes to support student learning (Thomas and Collier 1997). Fourthly, descriptive research is available on the different models of organising multilingual education (e.g. Busch 2011; García 2009; Wright and Baker 2017), also reviews of specific regional and country-specific studies are offered (e.g. Baetens Beardsmore 1992; Hélot and Cavalli 2017; Judith Purkarthofer and Jan Mossakowski 2011; Sierens and Van Avermaet 2017). Finally, there is a line of research focusing on case studies of highly effective multilingual schools (e.g. Alanis and Rodriguez 2008; Berman et al. 1995; García et al. 2013; de Jong 2002; Smith, Coggins, and Cardoso 2008) that provide best practice examples to other schools. However, none of these lines of research have comprehensively or systematically dealt with the issue of how school leaders could approach the decisions and choices regarding multilingual education. The knowledge available seems to be rather fragmented and dispersed. Neither do the available studies provide assistance on how to account for different factors surrounding multilingual education and decide on the most suitable approach. More specifically, the available studies do not assist school leaderships in their analysis, review, evaluation, and revision of multilingual education. Baetens Beardsmore has referred to this issue in 1997 by drawing attention to the need of integrated assessment of the fragmented and isolated variables explaining successful programmes (cited in Marsh 2012).

Therefore, our article argues that there is a need to integrate and synthesize the current available knowledge and different lines of research into a conceptual framework that would comprehensively enable school leaders to analyse, review, evaluate, and revise the multilingual education situation at their schools. Departing conceptually from a heteroglossic language ideology that recognizes the co-existence of multiple and varying types of languages and proficiencies (García 2009) and values of plurilingualism (Piccardo 2017) this article takes the first steps in addressing the existent research gap by proposing a preliminary conceptual framework on multilingual education to help school leaders address linguistic diversity and revise current approaches if necessary. More specifically, by systematically analysing the current available theoretical concepts of multilingual education and synthesizing on their strengths and weaknesses, a new integrated conceptual approach is being offered in the form of a guidance tool. The article also discusses the characteristics that such a comprehensive analytical framework should entail.

Our article defines multilingual education as “the use of two or more languages in education provided that schools aim at multilingualism and multiliteracy” (Cenoz 2009:4). The term ‘multilingual’ is preferred over ‘bilingual’ in order to correctly reflect the current actual practice in the academic field where most time bilingual education tends to refer to multilingualism (García and Lin 2017). The term ‘multilingual education’ includes the US equivalent of ‘dual-language education’

(Tedick 2015) but does not incorporate the more elusive and unclear term of ‘content and language integrated learning’ (CLIL) used in Europe (Cenoz, Genesee, and Gorter 2014) because CLIL could also be applied in monolingual education for teaching foreign language. Our definition is also reflected in the search terms used in the literature review.

2. Evaluation of current theoretical frameworks on multilingual education

Prior to searching relevant literature on theoretical frameworks on multilingual education, an analytical frame was established on characteristics we intended to evaluate in them. On the one hand, we kept in mind the school leaders’ perspective that initiated the analysis (e.g. usefulness for practical situations, systematic approach, inclusive education needs); on the other, our work was guided by conceptual framing from the fields of education, social research, and management because all of these fields deal with aspects of policy guidance, monitoring and evaluation that are instrumental in forming policy and practice.

Firstly, to begin with the synthesis of frameworks, the concept of inclusive education (Loreman, Forlin, and Sharma 2014) was used for the basis with its different levels of analysis (macro, meso and micro levels defined) together with the systematic approach to education (input, process and output indicators listed), outlining different elements (resources, climate, participation, practice, etc.), and the inclusive education approach. Then, it was complemented with the ideas of the indicator development in the areas of special needs education (EADSNE 2009) and social policy (Noll 2002) where the criteria focus on aspects of informativeness, consistency, sensitivity, non-redundancy, comprehensiveness, and parsimony. These criteria are considered central for a guidance tool to be applicable and useful for policymakers as well as school leaders. Additionally, the classical S.M.A.R.T. approach of indicator development (Doran, 1981) was used, as it also outlines critique of monitoring tools to be functional and effective for policy. S.M.A.R.T. – refers to Specific, Measurable, Assignable, Realistic, Time-related (Doran 1981).

Based on these approaches, six evaluation criteria are listed to guide the analytical process of reviewing current multilingual conceptual frameworks:

- (1) Comprehensiveness A: do the analytical frameworks approach multilingual education systematically so that the factors outlined cover all different levels of analysis, i.e. macro (regional/community), meso (school) and micro levels (student, teacher)?
- (2) Comprehensiveness B: do the analytical frameworks approach multilingual education systematically so that the factors include all different categories of education process, i.e. inputs, processes and outputs?
- (3) Comprehensiveness C: do the analytical frameworks approach multilingual education systematically so that the factors outline clear subcategories under each category of inputs, processes and outputs?

- (4) Specificity: do the factors in the frameworks target a specific area?
- (5) Measurability: are the factors any way measurable or quantifiable to make their evaluation possible?
- (6) Inclusion of effectiveness: do the frameworks make a reference to whether the factors involved have direct or indirect influence on the outcomes of multilingual education?

3. Overview of theoretical frameworks identified for literature review

A systematic literature review was carried out in spring 2018 in the electronic database of EBSCO Discovery Service using the following search terms: ‘bilingual education’ OR ‘multilingual education’ OR ‘heteroglossic education’ OR ‘plurilingual education’ OR ‘dual language education’ together with terms referring to theoretical frameworks such as ‘theoretical concept’ OR ‘theoretical model’ OR ‘analytical framework’ OR ‘analytical concept’ OR ‘analytical model’ and influencing factors such as ‘variable’ OR ‘mechanism’ OR ‘factor’. The previous terms were coupled with reference to minority student status ‘minority student’ OR ‘minority pupil’ OR ‘minority child’ OR ‘immigrant student’ OR ‘immigrant pupil’ OR ‘immigrant child’ in order to maintain focus on students other than the mainstream/majority.

The search yielded 582 articles. These articles were then screened for relevance based on the title and abstract. The following inclusion criteria were applied: the article had to focus on bi/multilingual education (and not, for instance, foreign language learning); it had to contain a theoretical framework on bi/multilingual education that addressed factors affecting the functioning of this type of education; it had to be on school education (K12) and not deal with special needs education; and it had to be in English. The screening involved two different coders that independently double-coded 13% ($n = 75$) of the article titles and abstracts. The Cohen’s κ was run to determine if there was enough agreement between two coders’ judgement on inclusion of the articles. There was moderate agreement between their judgements, $\kappa = .446$, $p < .001$ (.4–.6 is considered moderate according to Altman (1990)). The title and abstract screening resulted in 75 articles. These were then read in full text to locate the expected theoretical frameworks. However, this did not result in any comprehensive theoretical frameworks. All the articles found were either empirical studies not comprehensively addressing the influential factors or were dealing with only some particular aspects of bi/multilingual education. After that, an iterative search and review process was carried out to identify relevant sources. This consisted of different searches in books and articles that led to a few results and then again pointed to other sources referenced in the literature. In the end, the search yielded five approaches that have addressed the factors influencing the functioning of multilingual education at the state, region or school level¹. The five approaches are (see also Table 1 for an overview):

¹ Models that address bilingual education or bilingualism/biliteracy only at individual levels, e.g. Cummins (1979, 2000) or Hornberger (2003) were omitted because a comprehensive overview with the inclusion of various levels was sought.

- (1) A Model for the Description, Analysis and perhaps Evaluation of Bilingual Education by Spolsky, Green, and Read (1976) provides a decision tool for administrators to describe and analyse multilingual education in order to make appropriate choices, to help mapping all the relevant factors into an integrated structure pointing out their interconnections. The model composes of three hexagons referring to respective levels of analysis: the situational (community level), the operational (school level), and the outcomes (the effects level). The model is based on a hexagonal figure outlining six sets of factors (psychological, sociological, economic, political, religio-cultural, linguistic) influencing the function of education (education is the seventh factor itself). The authors outline a long inventory of factors (around 150) to be considered.
- (2) A Bilingual Education Model by Colin Baker (1985) provides guidance on generalizing from research on bilingual education, drawing attention to the dependencies in the bilingual education system. It presents a process model that differentiates inputs, outputs, context and process factors. Inputs refer to human ingredients in the classroom (e.g. student and teacher characteristics), while output designate either short- or long-term outcomes. Context refers to a wider societal and governmental level factors influencing bilingual education but also nature of the classroom and curriculum. Process refers to actual classroom practice, where teaching and learning are taking place.
- (3) Framework of Bilingual Education Policy by Hugo Baetens Beardsmore (2009), titled as ‘Macro-Factors and Interdependent Variables for Bilingual Education Policies’, discusses possibilities to help policy-makers and those wishing to develop educational systems, schools, and programs, to consider what needs to be taken into account. In contrast to Baker’s approach, Baetens Beardsmore does not outline a process view but lists the influencing factors by distinguishing between situational (or context) factors, operational factors, and outcome factors. It is pointed out that the list is not exhaustive, and only the most significant variables have been underlined. The author also stresses that these variables present generalities and cannot address all the important aspects of education systems, especially those of a local level that need further investigation.
- (4) Continua of Multilingual Education by Jasone Cenoz (2009) offers a tool for describing different situations of multilingual education. It includes specific educational variables inside a triangle together with linguistic variables and sociolinguistic variables influencing the education system from both macro and micro levels. As Cenoz (2009) concedes, the model ‘considers the complexity of education by including different types of variables but by using continua it also highlights the dynamics of education at the same time’ (p 38). Apart from Baker and Baetens Beardsmore, the continua approach allows comparing different education systems and settings by characterizing them with different points on the continua.
- (5) Forces, Mechanisms and Counterweights approach by Peeter Mehisto (2015b) draws out ‘factors that can contribute to or hinder the development of successful

Table 1. Overview of theoretical frameworks of multilingual education

Author	Bernard Spolsky, Joanna B. Green, John Read	Colin Baker	Hugo Baetens Beardsmore	Jasone Cenoz	Peeter Mehisto
Title	A Model for the Description, Analysis and perhaps Evaluation of Bilingual Education	A Bilingual Education Model	Macro-Factors and Interdependent Variables for Bilingual Education Policies	Continua of Multilingual Education	Forces, Mechanisms and Counterweights
Publication time	1976	1985	2009	2009	2015
Purpose	To describe, analyse, and evaluate	To provide guidance; draw attention to dependencies	To assist development and policy	To describe	To provide guidance
Role/function for use	Decision tool	Analytical guidance	Analytical guidance	Description, comparison	Analytical guidance
Main factors	6 sets of factors (psychological, sociological, economic, political, religio-cultural, linguistic) shaping education at 3 interdependent levels (situational, operational, effects)	4 sets of factors (input, output, context, and process)	3 sets of factors (situational, operational and outcome)	3 sets of main factors (sociolinguistic factors at macro level, sociolinguistic factors at micro level, linguistic distance) + educational characteristics	3 sets of main factors (forces, mechanisms, and counterweights) + contextual factors
Total number of factors	~ 150 ²	21	34	13	40 (61) ³
Visual representation used	A hexagonal figure with 3 interdependent levels + listed inventory of factors	A process model	A table with listed factors	A triangular figure	A triangular figure

² Various interpretations of number of factors possible.

³ A distinction is made between core factors and additional factors.

bilingual or trilingual education' (2015b:xvii). The forces refer to a 'form of intellectual power, vigour or energy that has the capacity to affect people and events' or lead to action. In contrast to the more intangible forces, the mechanisms are concrete factors that 'belong to the material realm' (2015b:xviii). The mechanisms refer to aspects of policy, structures, funding, etc. that shape the functioning of bi- or trilingual education systems; they interact with the forces as forces direct how mechanisms are used. The counterweights are the factors that balance the tension between the forces and the mechanisms. Mehisto (2015a) also lists the most common factors under each category underscoring the unexhaustive nature of these lists. Overall, the approach proposed by Mehisto focuses mostly on bi- or trilingual programme implementation success and less on the aspect of choice (what kind of programme should be chosen).

4. Results of evaluation of current theoretical frameworks of multilingual education

The models proposed by Spolsky et al. (1976), Baker (1985), Baetens Beardsmore (2009), Cenoz (2009), and Mehisto (2015) were systematically analysed from the perspective of comprehensiveness (having three sub-categories), specificity, measurability and reference to effectiveness. An overview of the results of the evaluation is presented in Table 2. As is evident from the Table, different models met the criteria to varying extents.

In terms of comprehensiveness, the model presented by Spolsky and his co-authors (1976) was the most systematic and thorough addressing different levels, categories as well as providing details of factors under each category. Spolsky et al. had developed a systematic inventory of factors to be analysed and evaluated when administrators of education need to make choices regarding bilingual education. They did not use the terms micro, meso and macro but all the discussed factors addressed these levels together with focusing on aspects of inputs, processes and outcomes. The models proposed by Baker (1985) and Baetens Beardsmore (2009) were also systematic in these aspects but lacked some clarity or detail regarding the content or nature of factors (e.g. at subcategory level). They were discussing various aspects under the factors but mostly in the language of examples; the authors had not taken an approach to systematise all the relevant sub-categories.

Mehisto (2015) used a different approach of categorization – he has contrasted the factors based on their tangibility and how the different factors could be balanced. Even though in cases it could be inferred from his approach that forces refer to contextual or more general input factors and mechanisms cover more specific inputs, processes and outcomes, the approach used has not been based on this particular systematic review of factors. Occasionally, it remains unclear whether or how the outlined factors could be categorized under this approach. In the model introduced by Cenoz (2009), outputs or outcomes were not mentioned at all. The latter is, however, critical as the way outputs or outcomes are stated or measured has important implications on the structure of multilingual education.

Table 2. Comparative evaluation of theoretical frameworks of multilingual education

Evaluation criteria	Spolsky, Green, and Read 1976	Baker 1985	Beardsmore 2009	Cenoz 2009	Mehisto 2015
Comprehensiveness	Coverage of all levels of macro, meso and micro	+	+	+	+/-
	Inclusion of categories of inputs ⁴ , processes and outputs	+	+	-	+/-
	Outline of subcategories under inputs, processes and outputs	+	+/-	+/-	+/-
Specificity	+/-	+/-	+/-	+/-	+/-
Measurability	+/-	-	+/-	+/-	+/-
Reference to effectiveness	-	+/-	+/-	-	+

Note: + criterion has been met; +/- criterion has been partially met; - criterion has not been met.

⁴ Sometimes contexts are separately viewed from inputs but as these are difficult to separate, contextual factors are included under inputs.

In regard of specificity, the criterion was partially fulfilled for all analysed approaches. The authors mostly sketch the main ideas under the outlined factors but what exactly should be looked at might remain vague or entirely not clear. Spolsky et al. admit themselves that the model is tentative, and the elements proposed would need quantification (1976:244). For most outlined factors or elements, it can be inferred that the authors have intended to provide the main idea of factors to draw attention to the most important elements in their models sacrificing the details for a manageable number of factors and prioritising the comprehensiveness of the model. To give an idea of the nature of the presented factors, a few examples are given. For instance, some aspects have been outlined rather clearly: linguistic characteristics of the languages involved or linguistic distance between the languages might be rather straight forward in the sense that it aims to compare the relatedness of the languages (e.g. are they from the same language family, do they use similar alphabet, etc.). The same applies to factors such as ‘the use of different languages as languages of instruction’, ‘teachers’ language proficiency in different languages’ or ‘teacher training for bilingual education’. At the same time, factors such as ‘learning materials’, ‘parental involvement’, ‘student engagement in bilingual curriculum’, ‘teachers’ cultural knowledge’, ‘the use of languages in the school for communication’ remain vague content-wise as it is not clear what exactly should be looked at. These factors might have different meaning in different contexts or to different people and hence need more specificity or detailing for analytical purposes.

As several outlined factors are not specific, it could be expected that their measurability remains limited. The analysed models meet the measurability criteria partially, each model has its own advantages and disadvantages. The analysis of the models reflects that the least measurable of the three is the model by Baker. Cenoz, who has provided the most concise and short tool, has outlined the factors more clearly while Baetens Beardsmore has opted for a broader approach leaving the content of the factors more general. The model of Spolsky et al., being the most thorough, tends to be more on a clear side while the one proposed by Mehisto lists the factors in more broad terms.

Finally, reviewing the models from the effectiveness aspect, it could be seen that the one by Mehisto is the only one to meet the criteria fully. This is because Mehisto’s approach stems mostly from an effectiveness perspective as he intended to list the factors that ‘often play an important role in successful bi/trilingual programmes’ (2015a:272). The models by Baker and Baetens Beardsmore have addressed the issue of effectiveness to some extent while Cenoz and Spolsky et al. have disregarded this. Baker, for instance, has referred to effectiveness when discussing the role of student attitude and motivation in attainment. In Baetens Beardsmore’s writing, more connections are apparent, e.g. effectiveness has been outlined in the discussions of language use out of school, status of languages, importance of progression and continuity in subject selection, parental involvement, whole school commitment to bilingual education. But overall, despite the fact that the two authors have made some references to effectiveness, their approach has been to draw attention to the main factors surrounding the functioning of the bi/multilingual education systems

and not so much inform the reader about aspects having critical evidence-based importance in this process. In case of Cenoz's approach, it is not surprising that effectiveness has been excluded as she has mostly focused on the comparison aspect of multilingual education systems.

To conclude the discussion on the evaluation of the established criteria, it can be said that the existing frameworks presented above mostly function as broad maps to signify the different types of factors influencing multilingual education at different levels. While the one proposed by Cenoz acts mostly as a diagnosing or comparison tool, the ones published by others underscore the aspects of complexity of the process from different angles. Spolsky et al., Baetens Beardsmore, and Mehisto have made more of an effort to list a wider range of influencing factors while Baker has underlined the important interdependence of various factors in the whole process. To some extent, all the authors have also drawn attention to the issue of different nature of variables, e.g. tangible/intangible, under/not under the control of schools.

All in all, the goal of the analysed frameworks generally has not been to provide deep descriptions of the influencing variables. As the authors themselves suggest, the lists of factors underscore the most important variables and they (mostly) do not try to be exhaustive. Thus, they outline a set of most significant aspects they regard important, but this remains insufficient when an analysis is needed to be taken up in a specific context. In this situation, a more comprehensive framework is needed to be able to map the situation in a systematic and rigorous way. Moreover, due to the nature of the presented frameworks, they mostly act as examples and their specific nature is only very broadly described. Thus, the specific content of variables remains at times unclear or least ambiguous. This, in turn, leads to low operationalisation in an analytical sense – the factors are not specific enough to enable analytical mapping, e.g. what to specifically look for under a factor, what conditions need to be met for a factor to be present or not, etc. The fact that reference to effectiveness has only been provided in a few places limits the value of the framework for decision makers. Consequently, the approaches provided by the authors mostly act as mind maps for researchers who need to analyse their particular cases – they point to most important aspects and guide a systematic approach but refrain from providing specific analytical tools. Mostly, it can be assumed, because every analysis is very much contextual (Baetens Beardsmore 1992; Mehisto 2015a), but also because the lists of factors could become too lengthy (Mackey 1970). At the same time, they lack analytical rigour to properly assist researchers or analysts intending to use them.

5. A way forward: synthesizing current theoretical frameworks

Based on the analysis of the current models, considering the shortcomings appearing in these and departing from a viewpoint that a guidance tool is needed for school leaders, a new tentative systematic framework is proposed. We conceptualize a comprehensive guidance tool for evaluating, researching, revising or developing multilingual education. We believe that it can be used independently of the context

as it proposes the main framework and not the compulsory list to be checked or followed by the potential user; it is easily adjustable for educational systems or practices. School leadership can focus on the most relevant questions at hand while having the full list of potential factors in front of them.

Based on the idea that education is a complex process where the outcomes are affected by an interplay of multiple factors, a systems theory approach has been adopted. The ecological approach to social systems views social systems as a unified whole (Kelly et al. 2000) and focuses on the interplay of relational, contextual and situational factors at play at macro, meso and micro levels (Peirson et al. 2011). This view underlines the importance of the interactions between various influencing factors, as well as interdependencies between the environmental structures and the processes taking place within and between them (Bronfenbrenner 1977). The three distinct levels identified are defined as follows: the micro system refers to the immediate environment surrounding the person; the meso system comprises interrelations among major settings, e.g. school; and the macro system is the overarching institutional patterns of the culture, e.g. economic, social, educational, legal and political systems⁵ (Bronfenbrenner 1977). Bratt Paulston (1992) has criticised the systems theory for its limited ability to operationalize factors, especially the contextual type ones but this article argues that for the purposes of holistically analysing the factors of surrounding multilingual education, this framework allows both keeping an eye on the detail as well as providing a comprehensive view of a school at hand. Or as Leonard (2011:990) has emphasized, Bronfenbrenner's theory is both 'expansive, yet focused' as it provides a double view of the processes at different levels while also enabling to analyse individual level issues. For this very reason, the model proposes to view the factors surrounding multilingual education at macro, meso and micro levels as well as encounter for the interrelationships between the different level variables.

Next, the model proposes to view influencing factors in terms of inputs, processes and outputs similarly to Spolsky et al. and Baker⁶ analysed here. This is also characteristic of a systems theory approach (Bratt Paulston 1992) as well as utilized in school effectiveness research, e.g. integrated model of school effectiveness (Scheerens 1999). Also, the inputs-processes-outcomes approach allows a systematic review of all relevant factors and highlights the interdependence across these. Therefore, the model suggested here proposes to separately view a) input factors such as policy/ideology, resources, leadership, curriculum; b) processes that outline school climate, attitudes, beliefs, practices, support, collaboration; and c) outcomes in the form of participation, achievements, results, post-school options. These subcategories under inputs, processes and outcomes were derived from inclusive education indicators proposed by Loreman, Forlin, & Sharma (2014) and were implemented because the idea of welcoming different languages

⁵ Bronfenbrenner (1977) additionally adds the level of exosystem as an extension of mesosystemas but this was omitted for clarity purposes.

⁶ Baker distinguishes further contextual factors from direct inputs. But since this article is already separately viewing factors at different levels (macro, meso, micro) and the contextual factors are often difficult to distinguish from inputs, these are seen together here.

in one educational system or institution coincides with the concept of inclusive education. Each subcategory under inputs, processes and outcomes, e.g. policy or practice, contains specific indicators that address detailed aspects of these factors. These indicators were developed based on the analysed five theoretical frameworks but were also inspired by the inclusive education indicators (Loreman et al. 2014). Additionally, research evidence on multilingual school effectiveness was integrated (Alanis and Rodriguez 2008; Ardasheva 2016; Berman et al. 1995; Buttaro 2014; Carhill, Suárez-Orozco, and Páez 2008; Collins 2014; Dixon et al. 2012; García et al. 2013; Guglielmi 2008, 2012; de Jong 2002; Mehisto and Asser 2007; Mercuri and Ebe 2011; Perez and Ochoa 1993; Robledo Montecel and Danini 2002; Smith et al. 2008; Thomas and Collier 1997; Uchikoshi and Maniates 2010).

The main idea of the proposed framework is that all the relevant levels of education (macro, meso and micro) are explicitly included and systematically reviewed by categories (inputs, processes, outcomes) (see Figure 1). For instance, if the national/regional policy claims that the inclusion is an everyday norm, and that students with different linguistic backgrounds are welcomed with the appropriate support systems and tolerant attitudes at school, it should be possible to trace whether this policy is reflected in the school's everyday practices as well as in the attitudes of the members of school. This way, the vertical coherence (suggested by the vertical arrows in the graph) of the three levels from top to down can be observed. The systems view of inputs, process and outcomes, on the other hand, enables to review horizontal

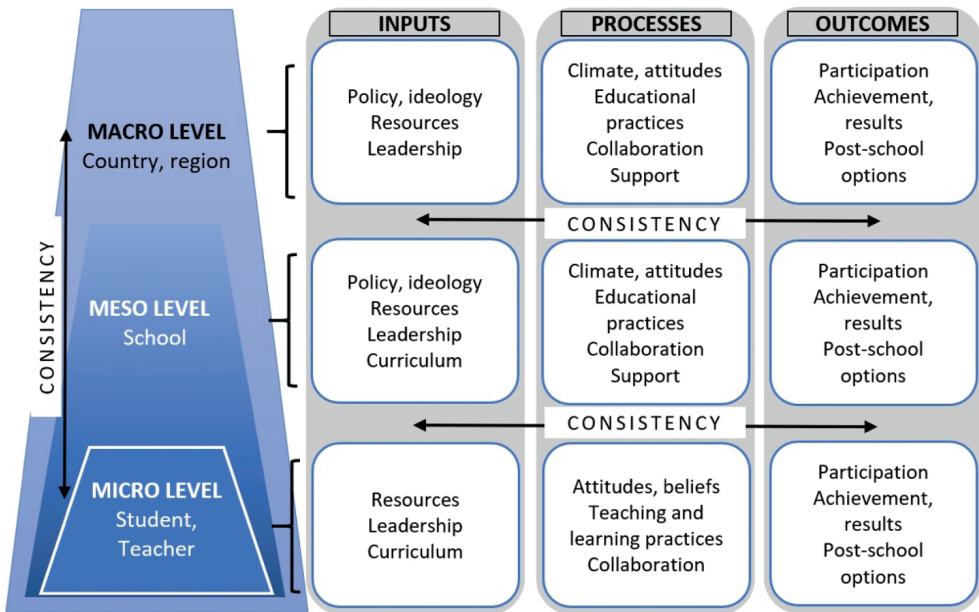


Figure 1. The conceptual framework of factors shaping multilingual education.

coherence (suggested by the horizontal arrows in the graph) in terms of whether the available inputs and processes allow achieving the expected goals of education. For instance, if full literacy in the state language is aimed for migrant students by the end of compulsory education, the school needs to be properly equipped for this in terms of teaching staff, teaching and learning materials; the curriculum should be accordingly set up; the teaching methodology chosen should facilitate the expected language development, etc. When incoherence and discontinuity is detected, school leaders can act on this information and initiate the respective change.

The proposed approach also intends to overcome the problems of specificity, and measurability in the models. The detailed inventory of factors (attached in the Appendices 1–4) lists variables in the format of questions to school leaders to review, similarly to Corson's school language policy development guideline (Corson 1999). The questions are grouped based on the four levels of analysis (macro, meso, micro-teacher and micro-student) and have been developed with specificity and clarity in mind. The questions are supposed to be evaluated on a continuum. The continuum outlines the two extremes of answers to the questions and enables school leaders to position the status of their school between the scale end points. For instance, when school leaders are reviewing the focus of their school language policy, they can evaluate whether it inclines towards greater multilingualism or favours mostly monolingualism. Or when evaluating the situation with teaching and learning materials, the leaders need to review to what extent are authentic materials used in teaching, are these used only in a few classes or in most classes that facilitate language learning.

6. Conclusion

Based on the needs and an apparent research gap on useful conceptual frameworks on multilingual education, a review of the existing literature on conceptual analytical frameworks on multilingual education was carried out. Arising from the results of this analysis and building on the advantages and disadvantages of the existing research, an elaborated conceptual framework was synthesized. The framework is proposed to function as a guidance tool for school leaders to facilitate and guide them in analysing and evaluating multilingual education; also, it was intended to help them adapt their systems in case of (sudden or dramatic) changes in their education provision contexts. The guidance tool encompasses all major levels of analysis – macro, meso and micro as well as systematic components of inputs, processes and outcomes. The proposed guidance tool is unique in its approach to address the levels and components in a systematic and comprehensive way while addressing the aspects of specificity, and measurability. The tool is set up in the format of questions to be answered using an accompanying evaluation continuum.

The study is an interdisciplinary research encompassing the fields of linguistics, education, and administration to propose a synthesized guidance tool for education professionals. In such a way it builds on cross-sectional research to aid educators in

dealing with complex issues related to multilingual education. However, this research could be developed even further by building on these side areas of management and public administration even more to make the guidance tool more functional and user-friendly. At the moment, the conceptual framework is merely a comprehensive list of factors that school leaders need to pay attention to or review but in the future, after piloting, the guidance tool could be tailored towards higher applicability as well as making clearer references to effectiveness of major critical factors.

Acknowledgements

This work was supported by the Estonian Research Council under the ERDF funded Grant RITA-Ränne.

Addresses:

Laura Kirss

Institute of Education
University of Tartu
Salme 1a
50103 Tartu, Estonia
Tel.: +372 505 5448

E-mail: laura.kirss@ut.ee

Ülle Säälük

Narva College
University of Tartu
Raekoja plats 2
20307 Narva, Estonia

Estonian Military Academy
Riia 12
51013 Tartu, Estonia

E-mail: ulle.saalik@ut.ee

Margus Pedaste

Institute of Education
University of Tartu
Salme 1a
50103 Tartu, Estonia

E-mail: margus.pedaste@ut.ee

Äli Leijen

Institute of Education
University of Tartu
Salme 1a
50103 Tartu, Estonia

E-mail: ali.leijen@ut.ee

References

- Admiraal, Wilfried, Gerard Westhoff, and Kees de Bot (2006) "Evaluation of bilingual secondary education in the Netherlands: students' language proficiency in English". *Educational Research and Evaluation* 12, 1, 75–93.
- Alanis, Iliana and Mariela A. Rodriguez (2008) "Sustaining a dual language immersion program: features of success". *Journal of Latinos and Education* 7, 4, 305–319.
- Altman, Douglas G. (1990) *Practical statistics for medical research*. 1st ed. Boca Raton, Fla: Chapman and Hall/CRC.
- Ardasheva, Yuliya (2016) "A Structural Equation Modeling Investigation of Relationships among school-aged ELs' individual difference characteristics and academic and second language outcomes". *Learning and Individual Differences* 47, 194–206.
- Baetens Beardsmore, Hugo (1992) "European models of bilingual education: practice, theory and development". Paper Presented at the Conference on Bilingualism and National Development, December 1991, Darussalam, Brunei.
- Baker, Colin (1985) *Aspects of bilingualism in Wales*. Outside US/Canada ed. Clevedon, Avon, England: Multilingual Matters.
- Baker, Doris Luft, Deni Lee Basaraba, and Paul Polanco (2016) "Connecting the present to the past: furthering the research on bilingual education and bilingualism". *Review of Research in Education* 40, 1, 821–883.
- Berman, Paul, Barry McLaughlin, Beverly McLeod, Catherine Minicucci, Baryl Nelson, and Katarina Woodworth (1995) *School reform and student diversity*. Vol 1: *Findings and conclusions: studies of education reform*. Institute for Policy Analysis and Research, Berkley, CA; national Center for Research on Cultural Diversity and Second Language Learning, Santa Cruz, CA.
- Bratt Paulston, Christina (1992) *Sociolinguistic perspectives on bilingual education*. Philadelphia: Multilingual Matters.
- Bronfenbrenner, Urie (1977) "Toward an experimental ecology of human development". *American Psychologist* 32, 7, 513–531.
- Busch, Brigitta (2011) "Trends and innovative practices in multilingual education in Europe: an overview". *International Review of Education* 57, 5-6, 541–549.
- Buttaro, Lucia (2014) "Effective bilingual education models". *Revue Francaise de Linguistique Appliquee* 19, 2, 29–40.
- Carhill, Avary, Carola Suárez-Orozco, and Mariela Páez (2008) "Explaining English language proficiency among adolescent immigrant students". *American Educational Research Journal* 45, 4, 1155.
- Cenoz, Jasone (2008) "Achievements and challenges in bilingual and multilingual education in the Basque country". *AILA Review* 21, 1, 13–30.
- Cenoz, Jasone (2009) *Towards multilingual education: Basque educational research from an international perspective*. Bristol, UK: Multilingual Matters.
- Cenoz, Jasone, Fred Genesee, and Durk Gorter (2014) "Critical analysis of CLIL: taking stock and looking forward". *Applied Linguistics* 35, 3, 243–262.
- Collins, Brian A. (2014) "Dual language development of Latino children: effect of instructional program type and the home and school language environment". *Early Childhood Research Quarterly* 29, 3, 389–397.

- Corson, David (1999) *Language policy in schools: a resource for teachers and administrators*. Mahwah, NJ: Lawrence Erlbaum Associates.
- Cummins, James (1979) “Linguistic interdependence and the educational development of bilingual children”. *Review of Educational Research* 49, 2, 222–251.
- Cummins, Jim (2000) *Language, power, and pedagogy: bilingual children in the crossfire*. Clevedon: Multilingual Matters.
- Devine, Dymrna (2013) “Practising leadership in newly multi-ethnic schools: tensions in the field?”. *British Journal of Sociology of Education* 34, 3, 392–411.
- Dicks, Joseph and Fred Genesee (2017) “Bilingual education in Canada”. In O. García, A. M. Y. Lin, and S. May, eds. *Bilingual and multilingual education*, 453–67. New York, NY: Springer.
- Dixon, L. Quentin, Jing Zhao, Jee-Young Shin, Shuang Wu, Jung-Hsuan Su, Renata Burgess-Brigham, Melike Unal Gezer, and Catherine Snow (2012) “What we know about second language acquisition: a synthesis from four perspectives”. *Review of Educational Research* 82, 1, 5–60.
- Doran, George T. (1981) “There’s a S.M.A.R.T. way to write managements’s goals and objectives”. *Management Review* 70, 11, 35.
- EADSNE (2009) *Development of a set of indicators – for inclusive education in Europe*. Kyriazopoulou, M., and Weber, H., eds. European Agency for Development in Special Needs Education, Odense, Denmark. Available online at <https://www.european-agency.org/sites/default/files/development-of-a-set-of-indicators-for-inclusive-education-in-europe_Indicators-EN-with-cover.pdf>. Accessed on 14.01.2020.
- European Commission (2017) *Relocation and resettlement*. Available online at <https://ec.europa.eu/home-affairs/sites/homeaffairs/files/what-we-do/policies/european-agenda-migration/20170613_factsheet_relocation_and_resettlement_en.pdf>. Accessed on 14.01.2020.
- Faas, Daniel, Aimee Smith, and Merike Darmody (2018) “The role of principals in creating inclusive school environments: insights from community national schools in Ireland”. *School Leadership & Management* 38, 4, 457–73.
- Forghani-Arani, Neda, Lucie Cerna, and Meredith Bannon (2019) “The lives of teachers in diverse classrooms”. *OECD Education Working Paper* 198.
- García, Ofelia (2009) *Bilingual education in the 21st century: a global perspective*. Chichester: Wiley-Blackwell.
- García, Ofelia and Angel M. Y. Lin (2017) “Extending understandings of bilingual and multilingual education”. In O. García, A. M. Y. Lin, and S. May, eds. *Bilingual and multilingual education*, 1–20. New York, NY: Springer.
- García, Ofelia, Heather Homonoff Woodley, Nelson Flores, and Haiwen Chu (2013) “Latino emergent bilingual youth in high schools: transcaring strategies for academic success”. *Urban Education* 48, 6, 798–827.
- Guglielmi, R. Sergio (2008) “Native language proficiency, English literacy, academic achievement, and occupational attainment in limited-english-proficient students: a latent growth modeling perspective”. *Journal of Educational Psychology* 100, 2, 322–42.
- Guglielmi, R. Sergio (2012) “Math and science achievement in English language learners: multivariate latent growth modeling of predictors, mediators, and moderators”. *Journal of Educational Psychology* 104, 3, 580–602.
- Hélot, Christine and Marisa Cavalli (2017) “Bilingual education in Europe: dominant languages”. In O. García, A. M. Y. Lin, and S. May, eds. *Bilingual and Multilingual Education*, 3–34. New York, NY: Springer.

- Hornberger, Nancy H. (2003) "Continua of biliteracy". In *Continua of biliteracy: an ecological framework for educational policy, research, and practice in multilingual settings, bilingual education and bilingualism*, 3–34. Clevedon: Multilingual Matters.
- International Organization for Migration (2017) *World migration report 2018*. Geneva: International Organization for Migration. Available online at <https://www.iom.int/sites/default/files/country/docs/china/r5_world_migration_report_2018_en.pdf>. Accessed on 15.01.2020.
- Johnson, Lauri (2012) "Culturally responsive leadership". In *Encyclopedia of Diversity in Education*. James A. Banks, ed. Vol. 1 547-549, Thousand Oaks, CA: SAGE Publications.
- de Jong, Ester J. (2002) "Effective bilingual education: from theory to academic achievement in a two-way bilingual program". *Bilingual Research Journal* 26, 1, 65–84.
- Kelly, James G., Ann Marie Ryan, B. Eileen Altman, and Stephen P. Stelzner (2000) "Understanding and changing social systems: an ecological view". In J. Rappaport and E. Seidman, eds. *Handbook of community psychology*, 133–159. New York: Springer Science+Business Media.
- Leonard, Jack (2011) "Using Bronfenbrenner's ecological theory to understand community partnerships: a historical case study of one urban high school". *Urban Education* 46, 5, 987–1010.
- Lo, Yuen Yi and Eric Siu Chung Lo (2014) "A meta-analysis of the effectiveness of English-medium education in Hong Kong". *Review of Educational Research* 84, 1, 47–73.
- Loreman, Tim, Chris Forlin, and Umesh Sharma (2014) "Measuring indicators of inclusive education: a systematic review of the literature". In C. Forlin and T. Loreman, eds. *Measuring inclusive education*, 165–187. Bingley, UK: Emerald Group Publishing Limited.
- Mackey, William F. (1970) "A typology of bilingual education". *Foreign Language Annals* 3, 4, 596–608.
- Marsh, David (2012) *Content and language integrated learning (CLIL): a development trajectory*. Cordoba: University of Cordoba.
- Mehisto, Peeter (2015a) "Conclusion: forces, mechanisms and counterweights". In P. Mehisto and F. Genesee, eds. *Building bilingual education systems: forces, mechanisms and counterweights*, 269–288, Cambridge: Cambridge University Press.
- Mehisto, Peeter (2015b) "Introduction: forces, mechanisms and counterweights". In P. Mehisto and F. Genesee, eds. *Building bilingual education systems: forces, mechanisms and counterweights*, xv–xxvii. Cambridge: Cambridge University Press.
- Mehisto, Peeter and Hiie Asser (2007) "Stakeholder perspectives: CLIL programme management in Estonia". *International Journal of Bilingual Education and Bilingualism* 10, 5, 683–701.
- Meissner, Fran and Steven Vertovec (2015) "Comparing super-diversity". *Ethnic and Racial Studies* 38, 4, 541–55.
- Mercuri, Sandra and Ann E. Ebe (2011) "Developing academic language and content for emergent bilinguals through a science inquiry unit". *Journal of Multilingual Education Research* 2, 81–102.
- Noll, Heinz-Herbert (2002) "Towards a European system of social indicators: theoretical framework and system architecture". *Social Indicators Research* 58, 1–3, 47–87.
- OECD (2017) "Recent developments in international migration movements and policies". *International Migration Outlook 2017*, 13–60.
- Peirson, Leslea J., Katherine M. Boydell, H. Bruce Ferguson, and Lorraine E. Ferris (2011) "An ecological process model of systems change". *American Journal of Community Psychology* 47, 3–4, 307–321.

- Perez, Ricardo J. and Salvador Hector Ochoa (1993) “A comparison of planning and personnel factors in bilingual programs among exemplary, non-exemplary, and accreditation notice schools”. *Bilingual Research Journal* 17, 3–4, 99–115.
- Piccardo, Enrica (2017) “Plurilingualism as a catalyst for creativity in superdiverse societies: a systemic analysis”. *Frontiers in Psychology* 8, 1–13.
- Purkarthofer, Judith and Jan Mossakowski (2011) “Bilingual teaching for multilingual students? Innovative dual-medium models in Slovene-German schools in Austria”. *International Review of Education* 57, 5-6, 551–565.
- Reljic, Gabrijela, Dieter Ferring, and Romain Martin (2015) “A meta-analysis on the effectiveness of bilingual programs in Europe”. *Review of Educational Research* 85, 1, 92–128.
- Robledo Montecel, Maria and Josie Danini (2002) “Successful bilingual education programs: development and the dissemination of criteria to identify promising and exemplary practices in bilingual education at the national level”. *Bilingual Research Journal* 26, 1, 1–21.
- Scheerens, Jaap (1999) “Concepts and theories of school effectiveness”. In A. J. Visscher, ed. *Managing schools towards high performance: linking school management theory to the school effectiveness knowledge base*, 37–70. Lisse, The Netherlands: Swets & Zeitlinger.
- Sierens, Sven and Piet Van Avermaet (2017) “Bilingual education in migrant languages in Western Europe”. In O. García, A. M. Y. Lin, and S. May, eds. *Bilingual and multilingual education*, 489–503. New York, NY: Springer.
- Smith, Janet M., Celine Coggins, and Jorge M. Cardoso (2008) “Best practices for English language learners in Massachusetts: five years after the Question 2 Mandate”. *Equity and Excellence in Education* 41, 3, 293–310.
- Spolsky, Bernard, Joanna B. Green, and John Read (1976) “A model for the description, analysis and perhaps evaluation of bilingual education”. In A. Verdoodt and R. Kjolseth, eds. *Language in sociology*, 233–263. Louvain: Institut de Linguistique de Louvain : depositaire, Editions Peeters.
- Tedick, Jane J. (2015) “United States of America: the paradoxes and possibilities of bilingual education”. In P. Mehisto and F. Genesee, eds. *Building bilingual education systems: forces, mechanism sand counterweights*, 1–22. (Cambridge Education Research.) Cambridge: Cambridge University Press.
- Thomas, Wayne P. and Virginia Collier (1997) *School effectiveness for language minority students*. National Clearinghouse for Bilingual Education. Available online at <http://www.thomasandcollier.com/assets/1997_thomas-collier97-1.pdf>. Accessed on 14.01.2020.
- Troike, Rudolph C. (1978) “Research evidence for the effectiveness of bilingual education”. *NABE Journal* 3, 1, 13–24.
- Uchikoshi, Yuuko and Helen Maniates (2010) “How does bilingual instruction enhance English achievement? A mixed-methods study of Cantonese-speaking and Spanish-speaking bilingual classrooms”. *Bilingual Research Journal* 33, 3, 364–85.
- UNICEF (2017) *A child is a child: protecting children on the move from violence, abuse and exploitation*. Available online at <https://www.unicef.org/publications/index_95956.html>. Accessed on 14.01.2020.
- Valentino, Rachel A. and Sean F. Reardon (2015) “Effectiveness of four instructional programs designed to serve English learners: variation by ethnicity and initial English proficiency”. *Educational Evaluation and Policy Analysis* 37, 4, 612–37.

- Vertovec, Steven (2007) "Super-diversity and its implications". *Ethnic and Racial Studies* 30, 6, 1024–54.
- Wright, Wayne E. and Colin Baker (2017) "Key concepts in bilingual education". In . O. García, A. M. Y. Lin, and S. May, eds. *Bilingual and multilingual education*, 65–79. New York, NY: Springer.

Appendix 1. State/region level indicators of multilingual (ML) education

STATE/REGION (MACRO) LEVEL INDICATORS		← Continua →				
INPUTS	Policy, Ideology	What is the focus of national/regional language policy? Is ML education stated as a goal at national/regional level?	Monolingual No Monoliteracy No Low Low No No No No Subtractive Low Low No No	Multilingual Yes Multiliteracy Yes Yes High High Yes Yes Yes Yes Additive High High Yes Yes		
	Resources	What are the linguistic goals for the population living in the region? Is ML competence viewed as a resource? Is there a system for identifying special (language) needs of students in place? What is the linguistic or cultural diversity in the region? What is the typological distance of languages in the region? Do the national/regional funding principles account for ML nature of education? Are school/teaching staff professionally developed to implement ML education? Are teaching materials and technology made available for implementing ML education? Are national guidelines and support systems available to implement ML education?	No No No No No No No No No No Subtractive Low Low No No	Yes Yes Yes High High Yes Yes Yes Yes Yes Additive High High Yes Yes		
	Leadership	What is the overall philosophy towards language learning?	No	Yes		
	Climate/Attitudes (context)	What is the relative vitality of school languages in region? What is the social status of languages in the region? Are variety of languages used in media? Do cultural values support ML education? What is the historical background regarding ML education?	Low Low No No Non-supportive	High High Yes Yes Supportive		
	PROCESSES	Educational practices	What is the community attitude towards ML education? What is the degree of socioeconomic segregation across language groups? What is the importance of linguistic ability in obtaining jobs?	Non-supportive Low Low Low	Supportive High High High	
		Collaboration	What is the role of school in community? Are specific support systems in place to address linguistic needs of students? Are different stakeholders included into policy making?	No No No	Yes Yes Yes	
		Support	Does local government support ML education? Does local community support ML education? Are linguistically diverse population groups socio-economically included in society?	No No No	Yes Yes Yes	
		OUTCOMES	Participation	Is monitoring of achievement being carried out across language groups? What is the level of obtained multiliteracy across language groups? What is the academic achievement in curriculum subjects across language groups?	No Low Low	Yes High High
			Post-school options	Is drop-out being monitored across language groups? Are educational career choices being monitored across language groups? Are employment rates being monitored across language groups?	No No No	Yes Yes Yes

Appendix 2. School level indicators of multilingual (ML) education

SCHOOL LEVEL (MESO) LEVEL INDICATORS		Continua ← Monolingualism → Multilingualism	
INPUTS	Policy, Ideology (context)	What is the focus of school language policy?	Monolingualism
		Is school policy driven by regional/community needs?	No
		Is ML education stated as a goal at school level?	No
		Is ML competence viewed at school as a value and resource?	No
		Is a system for identifying special (language) needs of students in place?	No
		Is there focus on facilitating the well-being of students from different linguistic backgrounds?	No
		Do school policy goals underline positive cross-cultural relationships and a respect for different cultures?	No
		Is there constant monitoring of success of students?	No
		Are school programme models developed based on theory?	No
		Do school funding principles account for ML nature of education?	No
		Are resources available for implementing ML education?	No
		Does school staff have competence in ML education?	No
		What is the heterogeneity of student body in terms of linguistic background?	Low
		Are social and health services integrated into school operations (beyond classroom support)?	No
PROCESSES	Climate, Attitudes (context)	Do school structures support teachers in implementing flexible assessments?	No
		Is school leadership open to change?	No
		Does leadership have training in ML education?	No
		What is the level of commitment to ML education among leadership?	No
		Does leadership have support from local community to advance ML education?	No
		Does leadership focus on cooperation?	No
		Is evidence-based management being implemented?	No
		Does curriculum have a ML focus?	No
		Does curriculum enable to make adjustments according to ML student needs?	No
		Does curriculum enable to include students' home culture and language?	No
		Does curriculum pay attention to prejudice reduction?	No
		Does curriculum pay attention to critical pedagogy?	No
		What is the overall philosophy towards language learning at school?	Subtractive
		What is the similarity of taught languages?	Low
What is the linguistic landscape inside school?	Monolingual		
What is the linguistic landscape inside classrooms?	Monolingual		
What is the overall attitude towards ML education at school?	Non-supportive		
Is there appreciation of cultural diversity?	No		
Is there a culture of caring?	No		
Is cooperation and collaboration perceived as a value?	No		
Is involvement of parents viewed as a value and useful resource?	No		
Is attention paid to challenging racism and discrimination (prejudice reduction)?	No		
Is the approach to educating limited-language-proficient students equal to mainstream students?	No		
What expectations are held towards limited-language-proficient students?	Low		
		High	

		SCHOOL LEVEL (MESO) LEVEL INDICATORS		Continua			
		←	→	Low	High		
PROCESSES	Educational practices	What is the number of languages taught as school subjects?		Low	High		
		What is the number of languages of instruction?		Low	High		
		What is the intensity of instruction in different languages?		Low	High		
		Is students' primary (L1) language used in instruction?		No	Yes		
		Are evaluations/assessments (exit criteria) adjusted to the needs of students of different linguistic backgrounds?		No	Yes		
		Are diverse curricular models carefully planned and implemented (flexibly, according to individual needs)?		No	Yes		
		Are supportive activities (e.g. after-school tutoring) available to ensure student success in L2?		No	Yes		
		Is the development of both language and content being fostered (CLIL)?		No	Yes		
		Is multiculturalism manifested in physical space at school?		No	Yes		
		Is there a focus on contact between students of L1 and L2?		No	Yes		
		Are parents involved into school life?		No	Yes		
		Is the community involved into school life?		No	Yes		
		Has a community of learners been established to develop and adjust programmes according to student needs?		No	Yes		
		Are external partners (e.g. researchers) involved into school life?		No	Yes		
		OUTCOMES	Support	Are inclusive decision making structures being implemented?		No	Yes
Does local government provide support for ML education?				No	Yes		
Is there a clear responsibility and roles regarding dealing with ML students?				No	Yes		
Is there a clear support system in place to address linguistic needs of students?				No	Yes		
Are students from linguistically and culturally diverse backgrounds involved actively in school life?				No	Yes		
Is monitoring of achievement and results being done across language groups?				No	Yes		
What is the level of obtained multiliteracy across language groups?				Low	High		
What is the level of academic achievement in curriculum subjects across language groups?				Low	High		
What is the level of drop-out across language groups?				Low	High		
What is the level of access to educational/career choices across language groups?				Low	High		
What is the employment rate across language groups?				Low	High		
Collaboration	Participation, Achievement, results						
Post-school options	Post-school options						

Appendix 3. Teacher level indicators of multilingual (ML) education

		TEACHER LEVEL (MICRO 1) INDICATORS		Continua		
		←			→	
		Monolingual			Multilingual	
INPUTS	Resources	What are the language abilities of teacher?			High	
		What is the knowledge of linguistics and teaching and learning of languages of teachers?			High	
		What is the level of cultural awareness of teachers?			Yes	
	Leadership	Do teachers have specific training regarding ML education?				High
		According to teachers, what is the adequacy of resources for addressing ML student needs?				High
		According to teachers, what is the adequacy of school staff for addressing ML student needs?				High
		Do teachers feel leadership support for dealing with ML student issues?				Yes
		Are teachers involved in decision making processes at school?				Yes
		Do teachers have freedom to adjust curriculum according to ML student needs?				Yes
	Curriculum	Is there teaching support available for providing ML education?				Yes
		What is the overall attitude towards ML education among teachers?				Supportive
		Do teachers hold high expectations for all students?				Yes
PROCESSES	Attitudes, beliefs	What are the perceived self-efficacy beliefs among teachers?			High	
		What is the level of openness among teachers?			High	
		What is the level of appreciation of cultural diversity among teachers?				High
		What is the level of caring among teachers?				High
		Do teachers hold pride in cultural heritage?				Yes
	Teaching practices	Do teachers use dialogical, interaction-based learning approach?				Yes
		Do teachers use experiential, inquiry-based learning?				Yes
		Do teachers use cross-curricular approach to learning?				Yes
		Do teachers use culturally responsive approach to learning?				Yes
		Is critical pedagogy an essential part of teaching and learning?				Yes
OUTCOMES	Achievement, results	Are learning outcomes (language, content, learning skills) explicitly stated in the learning process?			Yes	
		Are students being involved in planning their own learning?			Yes	
		Are authentic materials used for learning?				Yes
		Is the students' primary (L1) language used for learning?				Yes
		Are learning skills being modelled for students?				Yes
		Is there focus on vocabulary knowledge in second (L2) language?				Yes
		Is attention being paid to challenging racism and discrimination (prejudice reduction)?				Yes
		Is there cross-curricular teacher collaboration regarding ML students?				Yes
		Are strong home-school connections being fostered by teachers?				Yes
		Is there peer-to-peer support/mentoring regarding ML education among teachers?				Yes
Is team-teaching being used?				Yes		
Do teachers focus on including linguistically and culturally diverse students?				Yes		
Are teachers included into social and cultural activities at school and community level?				Yes		
Do teachers focus on monitoring the results of their own work (also regarding their ML students)?				Yes		

Appendix 4. Student level indicators of multilingual (ML) education

STUDENT LEVEL (MICRO 2) INDICATORS		← Continuum →	
Resources		Monolingual Low	Multilingual High
INPUTS	How could home literacy practices of students be described?	Low	High
	What is the level of native language ability?	Low	High
	What is the share of students not able to use any of school languages?	Low	High
	What is the aptitude, attitude and motivation for learning languages among students?	Low	High
	What is the cultural background of students?	Monocultural	Multicultural
	What is the social background of students?	Low	High
	What is the level of support for addressing ML student needs?	Low	High
	Is students' second language (L2)/school's language of instruction used in student social networks?	No	Yes
	Are students involved in decision making processes?	No	Yes
	Is individualized curriculum available for ML students?	No	Yes
PROCESSES	Is learning of students' first language/mother tongue (L1) available?	No	Yes
	Is learning of subjects in students' first language/mother tongue (L1) available?	No	Yes
	Does the curriculum enable to include students' home culture and languages?	No	Yes
	Is the school culture focused on appreciation and empowerment of each student?	No	Yes
	What is the overall students' attitude towards ML education?	Non-supportive	Supportive
	What is the level of openness among students?	Low	High
	What is the level of appreciation of cultural diversity among students?	Low	High
	Does peer-cooperative work dominate lessons?	No	Yes
	Does learning take place in psychologically safe climate where all students freely experiment with content and language?	No	Yes
	Is peer-to-peer support/mentoring available regarding ML education?	No	Yes
OUTCOMES	Are students apt to include linguistically and culturally diverse others?	No	Yes
	Are all students regardless of linguistic background included in community activities?	No	Yes
	Are relationships between linguistically and culturally diverse students good?	No	Yes
	What is the level of cultural competence across language groups?	Low	High
	What is the level of social competence across language groups?	Low	High
	What is the level of openness across language groups?	Low	High
	What is the level of cooperative competence across language groups?	Low	High
	What is the level of obtained multiliteracy across language groups?	Low	High
	What is the attitude towards different languages across language groups?	Non-supportive	Supportive
	What is the level of social and cultural integration at school across language groups?	Low	High
Post-school options	What is the level of openness to international mobility across language groups?	Low	High
	What is the level of pride in cultural heritage across language groups?	Low	High
	What is the level of self-esteem and empowerment across language groups?	Low	High
	What is the level of ethnocentrism across language groups?	Low	High
	What is the level of access to educational/career choices across language groups?	Low	High
	What is the employment rate across language groups?	Low	High