Studies in Educational Management

2019 (4) 24–43

Teacher's perspectives and practice of multilingualism in a Qazaqstan secondary school

Caroline Crisp

University College London

Received *05 June 2019* ***Accepted*** *01 December 2019*

ABSTRACT

Linguistic diversity, particularly within a STEM programme, is increasingly a desired competency in high schools world-wide. The way in which teachers enact multilingualism in their classrooms is dependent on historical and current, cultural and ideological influences operating within each context. Research suggests there is a knowledge gap concerning how teachers manage integrated, multilingual programmes and how these programmes impact on the teaching and learning processes. What constitutes best practice is uncertain. In Qazaqstan many ambiguities persist about how to scale such a programme country wide (Bridges, 2014) and questions are raised about how to train and prepare future teachers for implementing the trilingual education curricula. The success of such an ambitious programme lies with those tasked with its implementation.

The methodology teachers use is known as Content and Language Integrated Learning (CLIL). This paper comments on how such a multilingual programme policy has been transferred into practice within the context of a high school in Qazaqstan, and comments on what is working in terms of the teaching processes as well as highlighting some of the barriers teachers face. By means of a case study, using a mixed methods format, the author finds that multilingualism in the Science classroom has revealed some positive outcomes in terms of raising teachers' self-efficacy. However, delivery of content to optimise student learning is dependent on the linguistic skill of the teacher, this requires more careful planning in order to ensure programme sustainability.

Keywords: *Multilingual, Trilingual, Student/Teacher's First Language, Student/Teacher's Second Language,*

Introduction

Qazaqstan has undergone dramatic political, social and economic change since its independence in 1991. In a bid to unite a very diverse population and to improve the country's economic capacity, the first president, Nuzultan Nazarbayev, implemented among others, the State Programme for Educational Development (SPED) 2011-2020. Recognising the need to acknowledge a (majority)

Correspond author E-mail address: crispettes@gmail.com

This paper is an extract from a paper entitled "*Trilingualism in the Secondary Science classroom in Kazakhstan: Teachers' perspectives"* the author, which was submitted to University College London in 2018 as part of a Master's Degree in Educational International Development.

Russian-speaking population while at the same time re-establishing the Kazakh language as a means of creating a cohesive national identity, English was selected as the *lingua franca*[1] (Yakavets 2014). This decision was based on the policy makers' perception that English (herein referred to as L3) holds a prominent position in the scientific world as well as promoting a democratic access to knowledge. Murillo, (cited by Abello-Contesse et al. 2013) indicates that the English language occupies a high status among the western 'developed' world which provides motivation for both students and teachers alike.

Qazaqstan's 2020 trilingual policy strategy, which looks towards international standards and best practices, aims at increasing:

- the share of the population that speaks Kazakh to 95% by 2020;"
- the share of the population that speaks English to 20% by 2020"; and
- the share of the population that speaks Kazakh (state), Russian and English to 20% by 2020" (Nazarbayev, 2011)

The Nazarbayev Intellectual Schools Strategic Development Plan, 2020 (herein referred to as NIS SD 2020), is central to this report. It is an initiative controlled by the Autonomous Education Organisation (AEO), whose board of trustees include President Nazarbayev and senior members of his office. Education is a sector to which the president and his government attach great importance and the seniority of the board members guarantees considerable financial support but also "very direct lines of accountability to the centre of political authority in Qazaqstan" (Bridges 2014 p.74). The schools[2] fall under the category of 'special' schools and are considered to be the prototypes for educational reform. They are fully state-funded, non-profit and are places where 'new' educational practices are tried out.

The first of these schools was opened in the city of Kokshetau in 2009, and to date there are 20 'flagship' schools, positioned in all the major cities throughout Qazaqstan. They present the opportunity for teachers to drive change and initiate a paradigm shift in the existing 19th century education system. A defining factor of these schools is that the curriculum must be fully integrated and trilingual. The students are selected based on the results of a series of aptitude tests which are prepared and assessed by the John Hopkins Institute. All children in possession of Qazaq nationality are eligible to apply to the school. Preference is given to those who demonstrate an aptitude for STEM subjects (Science, Technology, Engineering and Mathematics).

It is the educators who enable reform and social change in schools and are the links between the interventions and the intended outcomes. Teachers are at the centre of any pedagogical reform programme, and the challenges that teachers face often come from the policies themselves (Crehan 2018). They understand best the tensions or issues that affect their practice and should not be regarded as passive recipients of changes. Yet, teachers are not a homogeneous group, this report notes that the top-down authoritarian approach taken by the AEO together with a focus on

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[1] *The influences of the social conditions outside school, upon students and teachers inside the school, is recognised. In addition, the geopolitical reasons behind the trilingual policy, with English being the selected third language (L3) are matters beyond the scope of this report.*

[2] *Known locally as 'The President's Schools'.*

ambitious learning outcomes and an inflexible traditional assessment structure simultaneously facilitate change, but also act as constraints on the teachers' ability to exercise their professional judgement. Zeichner and Liston (2014) write that if the teacher 'self' is disregarded, the desired (learning) outcomes are unlikely to surface. Many ambiguities persist about how the programme will be scaled up across the country (Bridges 2014) and there are questions within the NIS about how to train and prepare future teachers for the trilingual education curriculum. In Qazaqstan, programme effectiveness, evaluation and monitoring has focused primarily on the students' perspectives and their learning outcomes, but there is a lack of qualitative research, both in the region and globally, about the teachers' perceptions of the reform programme (Omoeva 2011). This report is evaluative and the purpose of this research was to provide some guidance towards the future development of the programme. Therefore, the research was guided by the following questions:

1. *What are the constraints and the motivations facing teachers in a multilingual science classroom?*
2. *To what extent has the proposed NIS SD 2020 reform programme become embedded in the teachers' practice?*

Conceptual theoretical framework[3]

Social bilingualism

Social bilingualism was always prevalent in Qazaqstan, but a context where three languages are co-existing provides additional challenges. The pressure to conform to 'Global Standards' and Kazakhstan's alignment to international standards, was driven by the desire of the government to boost the nation's economy through its human capital. The multi-cultural discourse was a result of the newly independent state aligning with the Western (European) ideology of liberalism, democratisation and social justice, with the intention to advance the domestic agenda and to project a more democratic image to the global arena. A multilingual, literate population facilitates a better exchange of knowledge as well as commodities[4]. Multilingualism in education promotes equal, democratic access to knowledge and enhances mobility, and so providing better employment opportunities.

The NIS SD 2020 programme aims not only to normalise multilingualism into the nation's education system, but to transform its classroom pedagogy. The benefits to students of a multilingual programme are well documented, however, the benefit to teachers is not well researched.

The science teachers of NIS are expected to conduct their lessons in English, this demands more of the teacher, who must possess a high fluency in the target language (Richards and Rodgers 2014).

Content and Language Integrated Learning (CLIL)

CLIL is a dual-purpose methodology and has been embraced by the AEO as a solution for all learners (Zhetpisbayeva et al. 2012). It is considered to be a theoretically sound way to gaining

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[3] *(Crisp 2018)*

[4] *For example, in the airline and the space industries.*

proficiency in a foreign language (English) while simultaneously acquiring subject content knowledge and skills (Marsh 1994). Payant and Youjin (2015) cite Jessner (2006); De Angelis and Dewaele (2011) who suggest, learners of an additional language display more sophisticated learning strategies and metalinguistic awareness.

In summary, the teaching and learning process is more elaborate and deliberate when compared to the more assumptive L1 classroom (Lancaster 2018). Students (and their teachers) are encouraged to deal with language that is meaningful to them (particularly in the science subjects) where the content is more abstract and cognitively demanding (Abello-Contesse et al. 2013). In a study that took place in Colombia, teachers of CLIL agreed that the approach benefitted the students but there was still a great deal of uncertainty as to what the best methodology should be (McDougald 2015).

The existing literature provides a mixed basket of positive and negative outcomes from the teachers themselves (Wang and Kirkpatrick 2012; Lancaster 2018). Bandura (2010) states that a good model of implementation will not be fully realised if didactic modes of instruction are weak. Sir Michael Barber (2011) points out that "[Teachers] cannot give to the learners what they do not already possess." Omoeva (2012) raises a fundamental reason behind the negative outcomes when she points out that there is no fixed model for implementing CLIL, and guidelines are interpreted in many ways, its interdisciplinary nature, makes it difficult to evaluate with any reliability. The uncertainty surrounding the effectiveness of trilingual instruction within the present context is addressed by Banegas (2012) and Abello-Contesse et al. (2013) who state there is a case to be made for examining how teachers are coping with the demands of teaching in a multilingual setting. In state schools (England & Scotland), Coyle (2013) calls for more evidence in demonstrating effectiveness of students' learning experiences in terms of their linguistic and intercultural competence. Urmeneta and Evnitskaya (2014); Lin (2015) highlight the necessity for teacher education programmes to raise teachers' awareness of the role that teacher-student interaction plays in scaffolding their learning of both content and language.

The underlying issue for the teachers in the NIS schools is, that they are a significant group of individuals who play a pivotal role in a nation's development, and having the freedom or autonomy to carry out their tasks effectively without constraints is paramount. The conundrum is that their pedagogical practices are constrained by the rhetoric of accountability and economic values of immediate proficiency.

The following section explores the ways in which a group of teachers navigate these uncertainties. The aim is to better understand how they can be supported in order to improve and expand their contributions while using English (L3) as the language of instruction.

Methodology

The purpose of this research was to measure Science[5] and Mathematics teachers' perceptions and practices of multilingualism in their classrooms. The research is evaluative and the intention is to

[5] *includes computer technology*

inform future teachers and management of the issues and barriers that have arisen within the multilingual Science classroom. "The aim of evaluation is not to prove but to improve" (Kellaghan and Stufflebeam, 2003 p.10).

Therefore, to try to make sense of how the integrated, trilingual policy has impacted on teachers' sense of self-efficacy as well as their practice, a case study approach following Stake (1995) has been selected. The framework is ethnographical and capitalises on the researcher's position as a trusted member of the Science department. The aim was to provide relevant data to augment part of an on-going meta-evaluation of the NIS SD 2020 programme.

Research design[6]

To answer the research questions posed in the introduction, an interpretative approach was selected (Denzin and Lincoln 2003) and takes the form of a case study. It is an accepted methodology used to investigate and to understand issues in real time, notably in classroom settings. This case study is essentially a story about a group of teachers tasked with the implementation of an ambitious state policy programme. One advantage is that the case study method is flexible and allows for the inclusion of any unexpected data that may arise.

The problem is to try to find out how teachers can adapt their teaching to a multilingual environment while at the same time optimising their students' learning. What follows is an information gathering exercise, which is qualitative, in order to understand some of the mechanisms at play. Quantitative data provides a more general picture and including it into a case study provides an element of rigour. Hence a mixed methods approach was selected.

Data collection and analysis

One limitation of social research is that findings mask the power structures behind participants' responses and behaviours. Since human behaviour is complex, triangulation is used. If findings are corroborated from more than one standpoint, the data collected is then richer and more valid. For this reason, quantitative data was gathered in the form of an online survey, interpretations were then validated by triangulation with data obtained qualitatively through semi-structured interviews, classroom observations and one focus group session.

The anonymity of the online survey minimises potential biased procedures which are more difficult to avoid in face-to-face interviews or in the group participatory activities. Furthermore, its privacy meant that teachers may complete it in their own time. Also, social and evaluative concerns that can arise in an interview or during the focus group session are eliminated. The qualitative data from the survey was triangulated with a focus group session as well as the lesson observations. The author's position as a member of the NIS Science teaching staff as well as the advantage of a willing 'informant' (T1), has provided much 'insider' knowledge and an understanding surrounding the context, together with a strong network of connections among the participants. It is acknowledged then, that some reflexivity was unavoidable. Furthermore, the

[6] *(Crisp 2018)*

evaluative environment and the focus on student outcomes as well as the severe time constraints on both the teacher and the researcher meant that researcher bias is possible. At this point it is worth noting that the NIS SD 2020 programme has been regularly evaluated. The lesson observations that took place were (in the researcher's opinion) focussed on only the linguistic level of English spoken in the classroom. Often the evaluator was not a Science teacher and hence could not judge the quality and accuracy of the subject content being delivered. Furthermore, the lesson observations were scheduled, giving all concerned a few days to prepare. It was observed by the author that these lessons were highly scripted and rehearsed and hence did not portray a reliable picture of teachers' practice nor the students learning. A variety of tools were used to collect data.

Instruments

A survey

A survey was designed consisting of 30 questions. A five point Likert scale Bandura (2010) was used to measure perceptions.

Limitations of surveys are:

- Reductionist: data superficially covers a small number of issues.
- As it was a closed question survey, the option "not applicable" should have been omitted, as it does not provide any useful data without a written explanation by the respondent.

The survey data did however serve to provide issues to discuss during the focus group as well as the interviews.

Lesson observations

Exploring how multilingualism is practiced necessitated setting parameters, since the linguistic levels of the teachers were previously recorded, the researcher decided to focus on the ways in which language was used as well as the dialogue between teacher and student. Lesson observation sheets were adapted following Banegas (2015). Each forty-minute lesson was divided into 'beginning, middle and end'. Using the tally method, content activation and language activation activities were recorded, in addition to reading, writing, speaking and listening opportunities that the students had, as well as the Language (L1, L2 or L3) in which each activity was conducted[7]. The data collected includes both students and their teacher, since the teaching and learning process is essentially a dialogue between them.

- Students and teachers are divided into mixed ability groups according to their L1,
- (i.e. L1 Russian speakers and L1 Kazakh speakers).
- Each lesson lasted 40 minutes.
- Each of the eight observed classes comprised a different group of ten to twelve 17-18-year-old students.
- Student responses are recorded as one regardless of whether it was the same student or a different one.
- The length of each response is not recorded.

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[7] *In each of the observed lessons, the reading and writing activities were exclusively in English (L3).*

Advantages of carrying out lesson observations are:

- It allows a large amount of information to be gathered.
- It forms the essence of the analysis of multilingualism and allows the researcher to observe teachers' actual practice of CLIL.
- It provides quantitative data and essentially evaluates the product or outcomes of the programme in real time.

Focus group

This method of data collection reports and reflects on the findings from the survey. Known as a Participatory Learning Activity (PLA) following the guidelines in Shah et al. (1999), the researcher acts as a facilitator. Stewart and Shamdasani (2015) explain that focus groups are useful for exploratory types of research where discussions help to formulate some of the theoretical ideas teachers have about their experience.

The session was not recorded and participants were reassured once again that their anonymity was paramount. In order to ensure one hour when there would be no interruptions, the agreed suitable time was therefore a Saturday afternoon at the end of a very busy week. Nevertheless, it was lively and participants were enthusiastic about taking part.

Advantages of the focus group method are:

- The open response format allows an opportunity to collect large, rich amounts of data and to obtain deeper levels of meaning in the participants' responses gathered during the interviews and in the survey.
- The synergistic effect of the group setting may result in the production of ideas/data that might have been missing in individual interviews. A comment from one member of the group may trigger several responses from other participants.
- Participants feel more comfortable in a group setting and are more likely to voice an opinion without necessarily having to defend it.
- The group is relatively homogeneous (teachers who are teaching Science using CLIL) so data may be scaled up to other schools in other parts of the country/world.

Some of the limitations of the group participatory method are:

- The small numbers who participate means that the results are highly contextual but not generalizable.
- Group cohesiveness means that opinions may be biased by one or two of the more senior or opinionated participants.
- Because of the impact of the live group environment, the researcher may place too much importance on the data.
- Leading statements can persuade participants to voice outcomes that align with researcher bias (Featherstone 2018).

Semi-structured interviews

Interviews form an important part of a qualitative research because they enable the teachers to articulate their perspective (Featherstone, 2018). They also provide an opportunity to receive 'rich and sometimes unexpected data' on more complex and deep issues (Cohen et al. 1993 p.409).

Due to time constraints on the part of the researcher and the teachers, seven interviews (3 men and 4 women) were carried out between May and June 2018, each lasting approximately one hour. The time and place was determined by each participant, in a room where they were not disturbed and more importantly not overheard. The questions were open-ended and there was a certain degree of flexibility given to the length of time given for answers and discussion. The individual interviews allowed each teacher to share their experiences and for the researcher to gain a more insightful view of inferences gathered from the survey. Each interview began with the same question which asked the interviewee to compare his or her school experiences with those of the current students.

Advantages of semi-structured interviews are as with the focus group but gave the researcher the opportunity to gather opinions from individuals who may not have wanted to express in a group session.

Sampling

The context of the case was a school where the trilingual programme had been disseminated and practiced since 2013. The teachers selected to teach at a senior level have at minimum B2 level of English and are fluent in Russian and Kazakh.

Fourteen participants were initially approached, they had been employed by NIS for between three to six years and all had received some sort of training in CLIL methodology. One participant had 21 years teaching experience but had only recently joined the staff. All were contracted (together with normal teaching duties) to teach their subject to advanced level in English. The small sample size could be considered a limitation; the long distances between cities in Qazaqstan prevented the researcher from including participants from other schools. However, the methodology is replicable, and serves as a source of base-line data which could be conducted over a larger sample of (NIS) schools.

Ethical considerations

The researcher/author was cognisant of the code of conduct documentation to which all participants are expected to adhere and followed the guidelines issued by the University College London code of ethical conduct according to BERA.

The director of the school where the case study took place was provided with a copy of the study proposal translated into Russian, together with a letter requesting permission to carry out the research. After communicating the proposal to the Central Authority (AEO), permission was duly granted.

The researcher carrying out the lesson observations is a fully qualified science teacher and the students are accustomed to her presence in the classroom and around the school, as are the participants. The research involved consenting adults only, each participant was approached in in person, and provided with an information sheet and a consent form to read and sign at a convenient time. This was then followed up with an email. All participants signed the consent form, however one subsequently asked to be excluded. Each participant was approached individually and provided with information about the research and its expectations. Their anonymity was

guaranteed by allocating each participant a number between T1 and T12. All were informed of their option to withdraw from the study at any time.

Results

One participant left the school on a business trip during the time the research was carried out. This sample consisted of twelve male and female teachers from the Mathematics, Physics, Chemistry, Biology and Computer Technology departments of NIS. Each one had at least one graduate degree in their subject. Two of them hold Bachelor's degrees in their subjects, nine hold Masters degrees, and one a Doctorate. The results of each of the instruments will be discussed separately.

Survey results

Some unexpected data was revealed during the survey which is worth noting. The survey was piloted by some of the international teachers whose L1 was English. This was to ensure questions were clear and there were no potential misunderstandings. The average time taken for these teachers to complete the 30-question online survey was 12 minutes. The average time taken for the 11 participants, however, was 25 minutes. The issue of time constraints that the teachers experienced was then investigated further during the focus group session. N = 12 One participant was unable to access the online survey during the allocated week for completion so did not participate in the survey.

Table 1. Survey results – NIS Science teachers' needs analysis I[8]

Question	*Responses (%)*	
	Disagree/strongly disagree	*Agree/strongly agree*
Students are better focused. Engagement is high when reading/listening to texts in L3.		*100*
Students understand essential concept of texts in their L3.		*100*
Students' content knowledge is improved when reading/listening in L3.		*81*
Teachers preferred to switch to L1 when providing explanations for more complex concepts.		*100*
Teachers preferred to teach only in the L1.	*83*	
Teacher feels uncomfortable[9] when speaking to students in the L3.		*63*

[8] *(Crisp 2018)*

[9] *"I find that having to teach students in English prevents me from forming good relationships, it affects the way we communicate". (T12: 13th May 2018).*

Table 2: Survey results – NIS Science teachers' needs analysis II[10]

Question	*Responses (%)*	
	Disagree/strongly disagree	*Agree/strongly agree*
Need more guidance in CLIL methodology.		*100*
Use English resources (L3) exclusively during the lessons.		*90*
Have access to adequate choice of resources.		*99*
Feel confident in translating the L3 texts into L1 when necessary.		*82*
Would like more autonomy over the topics they had to teach.		*63*
Found it difficult constructing valid assessments which promoted students' critical thinking skills.		*82*

The majority of the respondents (92%) agreed/strongly agreed that allowing the simultaneous use of L1/L2 and L3 benefitted the students' understanding. Interestingly, only 54.5% of the respondents felt that it was their responsibility to teach or improve their students' English language skills[11], although 90% felt it was important that the students pronounced 'English scientific terms' correctly. During the focus group session, it emerged that many of the participants (as part of their accreditation process) were responsible for their student's Olympiad (Science) projects, where the expectation was that the student gives an oral presentation in English. The perception was that pronunciation was important, the quality of which was accredited directly to the teacher who is rewarded accordingly (OECD 2015).

Lesson observations[12]

The results portray a useful base-line picture of how language is used during the Science lessons. For the analysis, three main categories were identified:

1. To activate new vocabulary
2. To extend students' academic language
3. To promote cognition

Total number of lessons observed: 8
Total number of teachers observed: 8
Total number of subjects observed: 2 Chemistry
2 Physics
2 Computer Science
2 Biology

Using a tally system, the language used (L1, L2 or L3)[13] was recorded. Then the purpose of the dialogue was then recorded under the following categories:

- Discussion
- Answering questions

[10] *(Crisp 2018)*
[11] *At the time of writing, most of the students' linguistic abilities were above or equal to those of their teacher.*
[12] *(Crisp 2018)*
[13] *L1 is either Russian or Kazakh; L2 is either Kazakh or Russian; L3 is English.*

- Correcting
- Affirmation/reinforcing
- Questioning
- Providing context/explanation
- Vocabulary
- Instructions

The following figures summarise the tally obtained during each lesson. The number of times the teacher spoke and the language used was colour coded as per the key accompanying each graph, see below:

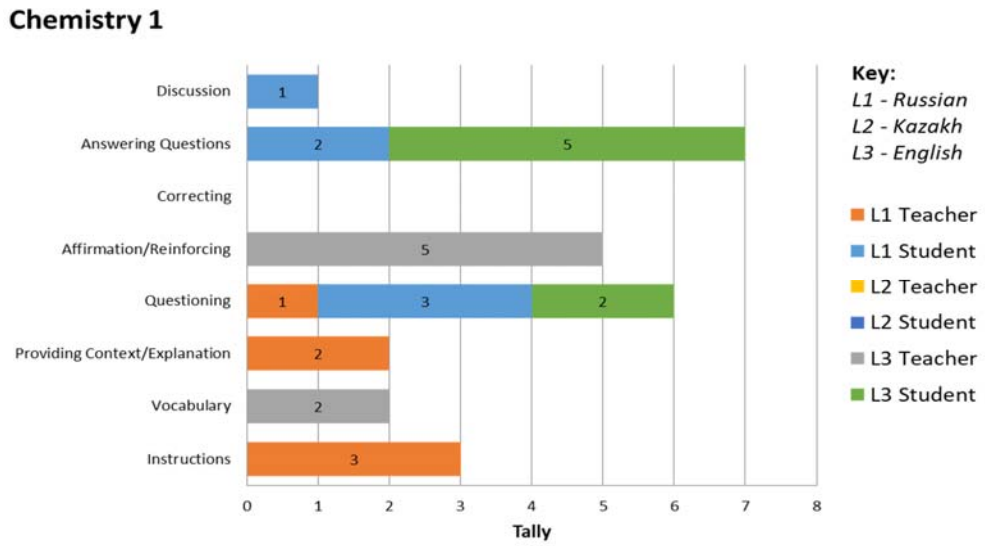

Figure 1. Breakdown of student-teacher dialogue in senior Chemistry class (Chemistry 1)

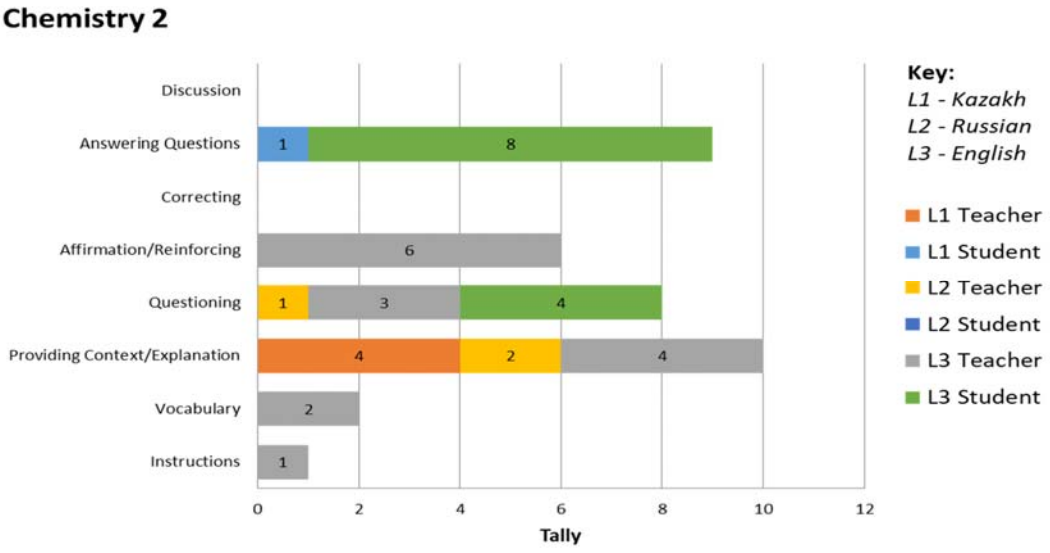

Figure 2. Breakdown of student-teacher dialogue in senior Chemistry class (Chemistry 2).

Although the same topic and the same subject were taught, the way in which the two different teachers used the three languages differed.

- In Figure 1 the teacher and students were L1-Russian. There was no recorded L2-Kazakh spoken.
- In Figure 2 the teacher and students were L1-Kazakh. L1, L2-Russian and L3-English were recorded.
- In Figure 1 the teacher used L3-English only for questioning and providing vocabulary to the students. In what will be termed a 'mirror' effect, the students answered/affirmed and provided their explanations in L3-English. Students reverted to their L1-Russian for discussion and questioning.
- In Figure 2 the teacher used L3-English more frequently, in questioning, providing vocabulary, explanations and reinforcing. The students also used L3-English more frequently and during the lesson, did not revert to L1-Kazakh at all.

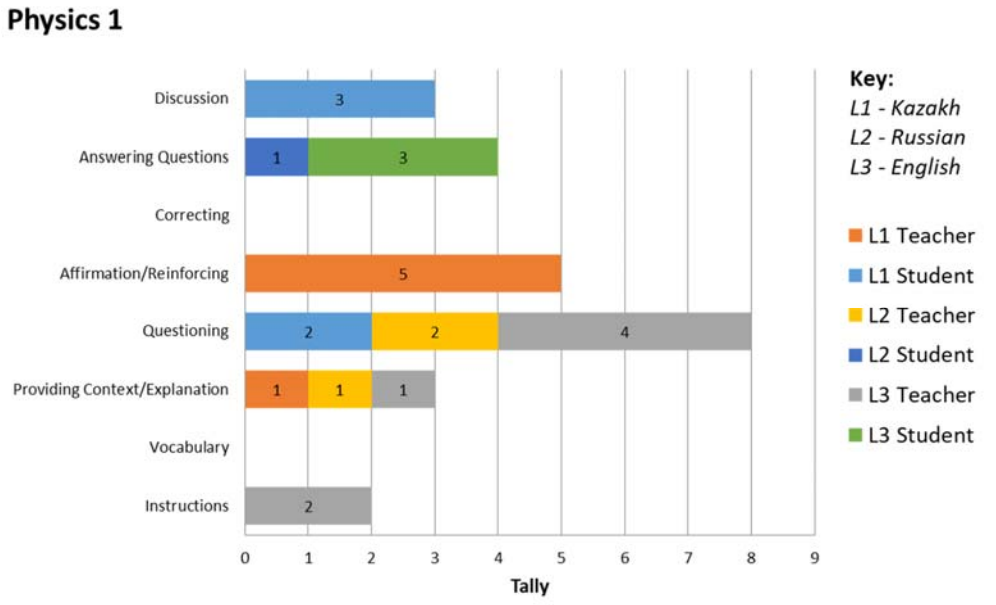

Figure 3. Breakdown of student-teacher dialogue in senior Physics class (Physics 1).
Note: Teacher/student L1 is Kazakh.

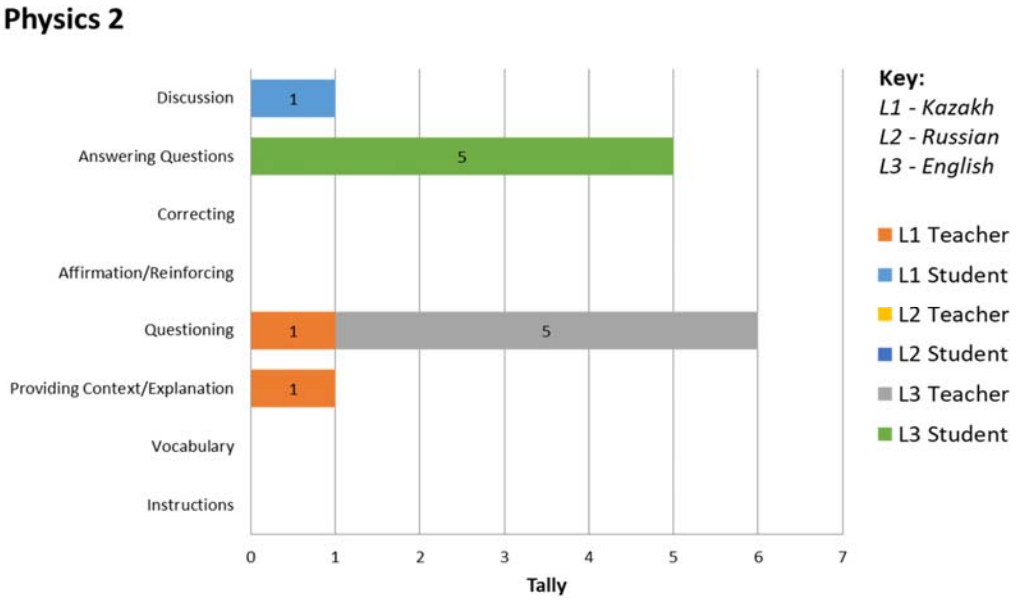

Figure 4. Breakdown of student-teacher dialogue in senior Physics class (Physics 2).

- Figures 3 and 4 again show that teachers' use of L3 is mirrored by the students. L3 is used most frequently for questioning.
- The two classes are different in that in Figure 4 the student-teacher dialogue makes use of all three languages: L1 for explanation and more frequently for affirmation, L2 and L3 as do the students. The student-teacher dialogue is limited to L1 and L3.

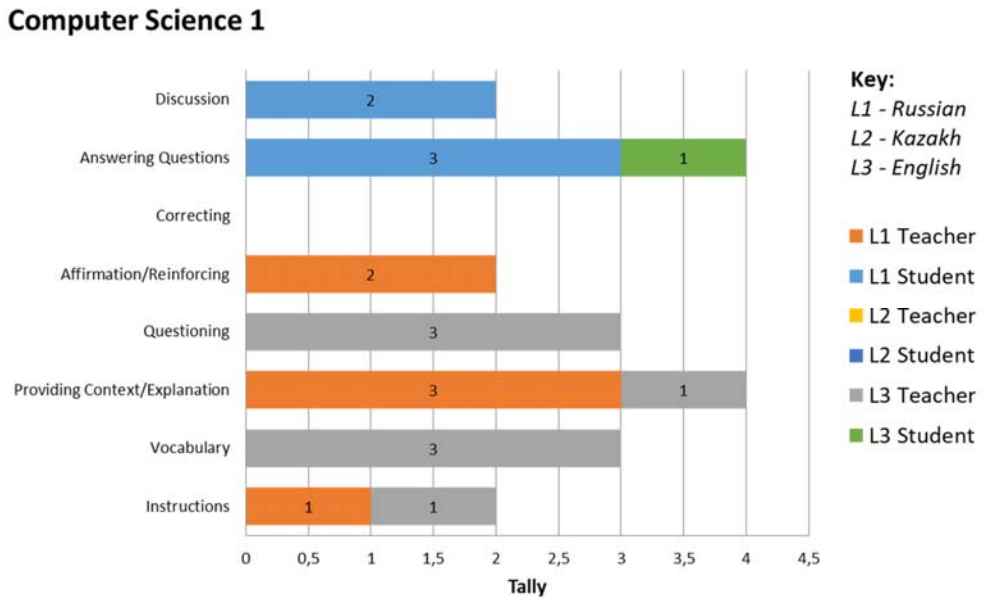

Figure 5. Breakdown of student-teacher dialogue in senior Computer Science (ITC) class (Computer Science 1).

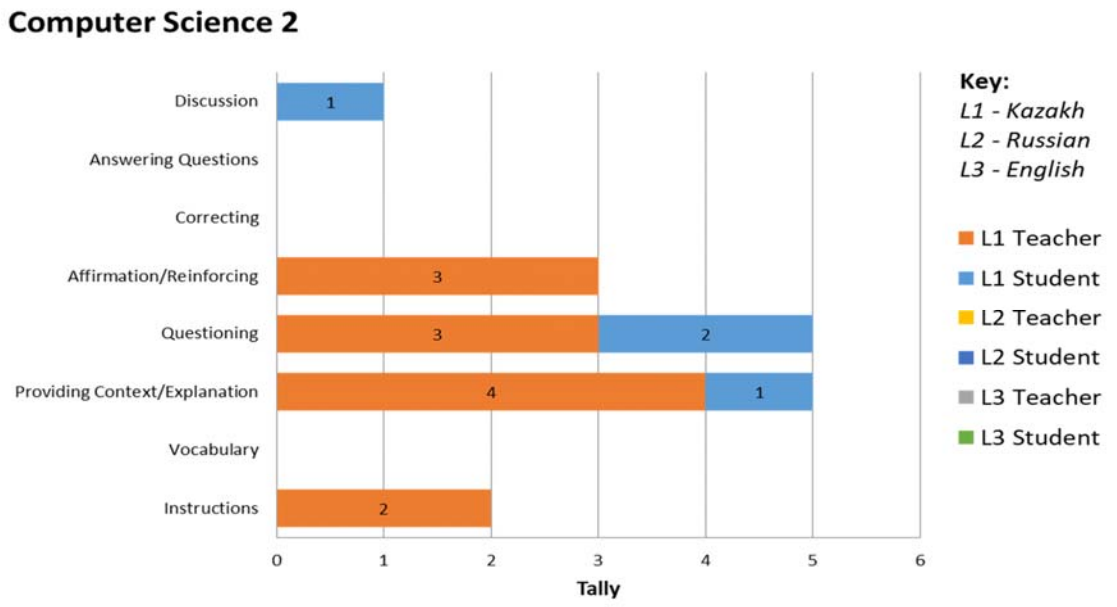

Figure 5. Breakdown of student-teacher dialogue in senior Computer Science (ITC) class (Computer Science 1).

The ITC classes portray a similar picture to both Chemistry and Physics in that the L3 is used for straightforward questioning and providing instruction to the students.

- Figure 5 shows that there was almost no L3 spoken by the students despite the teacher using L3 frequently for providing instruction, explanation and questioning. As in the Chemistry 1 class (L1-Russian, Figure 6.1), there was no Kazakh spoken.
- Figure 6 is different in that there was no L3 spoken at all. It is worth mentioning here that the ITC department has been without an international support presence for a year.

Figures 1 to 6 portray a very mixed picture, the trilingual policy and the CLIL methodology may be differently interpreted and practiced according to each individual teacher, depending not only on the linguistic background of each teacher but also of their students. Most importantly in all observed lessons, it highlighted how the use of an L3 diminished the dialogic dimension in the classroom; but also provided some clues[14] as to how language could be used to optimise the students' understanding of their content.

The dominant L3 dialogue between teacher and students was used for initial concept presentation (lesson objectives), for providing basic instructions and for straightforward, low level knowledge type questions which demanded one-word simple recall responses by the students. There was no observed dialogue where the teacher asked extended (probing) questions that demanded a higher level of critical thinking and linguistic skill by the students. There were no

[14] *See concluding remarks*

recorded cases of teachers providing feedback to the students. Teachers and students used their L1 (Russian or Kazakh) for explanations and providing context.

Focus group and structured interviews[15]

This activity provided an opportunity to triangulate data collected during the survey. For example, in the survey results 80% responses agreed that teaching in the L3 improved the students' understanding. However, the caveat here is that during the focus group session, two of the participants felt that it did not improve the students' linguistic skills because:

They will not bother to listen to the teacher when he/she explains in English and just wait until the explanation in their L1.

(T5: 5th June 2018)

The inquiry was responsive to the teachers' concerns and two issues were addressed. to provide a deeper understanding. Firstly, all participants agreed they needed more guidance and support in their teaching of CLIL.

Secondly, the issue of work/life balance was addressed. The recommended maximum number of hours per week for secondary classroom teachers is 52 hours (OECD 2014a) A survey in the U.K found that when teachers worked more than 48 hours per week they reported a poor work-life balance and that long working hours impacted negatively on their domestic/social life (Bubb and Earley, 2004). The data gathered from NIS participants indicated that the average number of hours they worked (on the school campus) is between 58-62. All participants indicated that working for NIS had impacted negatively on their private family life and they felt they would be more effective working a five-day week instead of the current six.

At least two days every week I get only four hours' sleep.

(T12: 5thJune 2018)

There was also consensus that planning and preparation of CLIL lessons require more time and they felt they would like more recognition of this by the management through the allocation of a lighter teaching timetable.

It would be better if we had to teach fewer classes.

(T10: 5th June 2018)

[Management]… do not realise we have to study the English language after school as well as our subject content so we are prepared for the class.

(T5: 5th June 2018)

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[15] *(Crisp 2018)*

The prescribed, changed, integrated curriculum provided an added constraint on the teachers' time.

Much of the content is new to us, we did not study this at university, we have to learn it first ourselves before presenting it to the students.
(T2: 5th June 2018)

Findings and recommendations[16]

The most important finding is that teachers perceive trilingualism as time consuming in terms of their lesson preparation but also in creating assessments and providing constructive feedback to their students. Having a negative impact on their family and social life but also on their self-efficacy. Therefore, it is recommended that teachers who are expected to teach in their L3 should be compensated with a lighter teaching timetable. It was also suggested that being allocated two parallel classes would then reduce preparation time.

Secondly, participants felt that studying a third language required a certain amount of sacrifice on their part in terms of time and finance, they indicated it would motivate them better if there was some recognition from management in terms of their status as teachers and in their renumeration. Therefore, it is recommended that accordingly there be some sort of adjustment made to the teachers' pay scale[17].

Thirdly, the lesson observations revealed that the teaching was centred mostly around extending student's vocabulary in their L3. Although this is an important aspect of a multilingual classroom, teachers also need to be encouraged to explore ways in which language may be used to optimise student's understanding of the subject content. The exercise highlighted the areas where using language could potentially improve the efficacy of the teaching process. Data gathered during lessons may be used to construct an individualised plan for each teacher whereby specific, measurable, achievable, realistic (SMART) goals for each teacher to focus on within a given time. The use of technology and universal access to user-friendly multimedia resources is also paramount in order to support the students' understanding and to fill in the L3 linguistic gaps of both teachers and students. The technology should be used creatively to save valuable class-time and to compensate for the extra time required when learning in the L3.

Along more encouraging lines, participants all acknowledged the positive effects of the professional development they had received during their employment with the NIS. None regretted their decision to accept the appointment to teach at the school and all felt that the international presence had enriched their cultural horizons as well as improving their future employment prospects.

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[16] *(Crisp 2018)*
[17] *At the time of writing this has been implemented. The impact is not evaluated as yet*

Conditions are better in this school; we have good resources.
(T10: 22nd June 2018)

We have improved our English; it has been interesting meeting [teachers from other cultures] we have learnt so much from the international teachers.
(T8: 22nd June 2018)

Looking to the future, capitalising on their improved linguistic skills, three of the seven interviewees had plans to further their studies in Europe and in America. One planned remain in the same city and to open a private English language school.

Then I can be my own boss!
(T1: 5th May 2018)

Conclusion

Globally, linguistic diversity is increasingly a desired competency for young people entering the twenty-first century workforce. Schools are the places where various skills are introduced and developed. Since teachers play a pivotal role in the dissemination of a multilingual programme it is important that they are fully aligned with the logic behind it. The difficulty lies in that there are many ambiguities and uncertainties surrounding its effectiveness. Most of these uncertainties arise because the methodology is difficult to evaluate mainly because there is no agreement as to what constitutes best practice.

The NIS SD 2020 programme is supported and funded by the highest authority, the accompanying accountability and evaluative environment was perceived by the teachers to be a constraint rather than as a reflective tool and has impacted on their freedom to innovate within the classroom. Furthermore, planning, preparing and creating resources in the multilingual classroom is more time consuming when compared with a monolingual. It must be noted though, that the aspirational pro-educational cultural norm which is prevalent in the NIS culture potentially adds strength to the programme's success.

The teaching and learning process is essentially a dialogue between teacher and student, so content delivery and expansion of academic vocabulary as well as promoting cognition is dependent to a great extent on the linguistic skills of the teacher. Teachers need support not only to improve their linguistic skills but also to plan balanced lessons where language is used to activate vocabulary as well as to stimulate critical thinking in students. The lesson observations revealed students take their cue from their teacher in the way in which language is used. This 'mirror' effect points to ways in which teachers may direct and enhance their students learning of both content and language more effectively. Analysing the lesson in terms of its content as well as the ways in which the teacher uses the L3 to extend the students' content knowledge as well as L3 academic language requires a different approach to the conventional. Further lesson analysis and on a wider scale is therefore required in order to support teachers in this regard.

Finally, it may be concluded that it takes an individual with particular aptitude to teach Science in a multilingual setting, which could be classified as a 'special needs' case and training provided

for the teachers accordingly. Neither teachers (nor their students) are a homogeneous group, and the way in which they teach is dependent on who they are and what they know. Teachers' perceptions were, that despite the extra workload the programme demands, they believe in its logic and demonstrated a high level of motivation and engagement. The fact that the teachers felt they were learning new subject matter as well as improving their linguistic skills, which in turn impacted positively on their students. The increased job opportunities and the raised status enjoyed by those teachers who could use more than two languages in their classroom provided them with significant motivation. This bodes well for the programme's sustainability provided appropriate support systems remain in place.

Acknowledgements

The author would like to pay tribute to the team of Kazakh Science teachers who willingly gave up their precious time to take part in this small research. Their dedication to task is exemplary and they are doing a great service to their students and colleagues alike.

This research received no specific grant from any funding agency in the public, commercial, or not-for-profit sectors.

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