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**Report following the analysis and evaluation of evidence submitted by Vilnius Technology Engineering Lyceum for the purpose of accreditation as a Thinking School by Thinking Schools @Exeter, School of Education, University of Exeter, UK.**

**Starting point: the school context**

Vilnius Technology Engineering Lyceum (VTEL) is a popular and successful primary/middle school catering for 330 children between the ages of 5 and 13. The school has the overarching mission of enabling all children to become holistic lifelong learners. Clear aims act to operationalise this mission and includes a strong engineering, technological and artistic foundation. Within this, curiosity and creativity aligned to experimentation thrives. VTEL recognises the close links between emotional wellbeing and learning, encouragement of curiosity, positivity resilience, cooperation and teamwork.<sup>1</sup>

Pupil progression through phases has high priority at VTEL and its innovative collaborative curriculum is carefully mapped out to achieve this. Full inclusion ensures that all children get the very best opportunities to develop their metacognitive skills alongside wider educational development. The school's Thinking School journey started in earnest in 2018 when the school first opened. Thus, the development of children's thinking has been a priority from the outset in response to an observed need to provide all children with the metacognitive skills and dispositions so that they could better meet the challenges that an ever-changing world presents. VTEL saw an opportunity to develop a common language for learning by taking a whole school approach to the teaching of thinking and the school has progressively embedded a range of metacognitive tools and processes. The school has the clear goal, which is to education creative, open-minded individuals who are able to think independently and interpret the processes of the modern world.<sup>2</sup>

VTEL has an innovative Thinking Working Group (Drive Team) made up of the Headteacher, Thinking Skills Coordinator, Teachers, Parents, Students, and a Psychologist. This has been pivotal to the school's development as a Thinking School. As a result of a sustained and progressive approach to the teaching of thinking, children at VTEL achieve well. However, it is lifelong learning that is placed at the core of the educational provision at the school. Learning sits alongside additional dimensions such as social, emotional, physical, and

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<sup>1</sup> Reflective Proforma, School's Website and Digital Drive Evidence

<sup>2</sup> Ibid

psychological wellbeing. Underpinning this provision is an inclusive child-centred provision embracing children, parents, staff, and the community.<sup>3</sup>

### **Evidence Base**

Thinking Schools @Exeter received the school's submission for in the form of a reflective proforma evidencing the history of the school's metacognitive education development journey and the work that the school had undertaken stemming back to the beginning of its focus towards Thinking Schools. The evidence for accreditation is skilfully woven into the reflective proforma and includes digital links, all of which are clearly linked to the 15 criteria. VTEL has an overall development structure referencing five core elements: Thinking Maps, Thinking Habits, Higher Level Questioning, Thinking Caps, and Thinking Keys. Within each of these domains there is ample explanatory information and exemplar materials linked to the school's curriculum policy and development planning.

### **Thinking School Ethos and Culture**

From the evidence presented, it is clear that Thinking Skills are embedded within the culture of VTEL. Curriculum policy documents and plans clearly map out a thinking strategy that subsequently feed into teaching strategies, and so moves thinking approaches from policy to practice. Pivotal to this is the high premium placed on sharing of best practice across the school to include all staff.<sup>4</sup>

The school provides parents with clear and helpful information relating to the thinking curriculum through newsletters, presentations, and school website. The Headteacher runs joint meetings of the entire parent community and introduces new Thinking School developments together with reinforcing established practice. A good example of parental involvement is the Teacher-Parent-Pupil workshops where thinking pedagogy is collaboratively shared in order to build a classroom thinking culture. Weekly newsletters further reinforce thinking approaches and act to keep a focussed momentum. VTEL has worked hard to establish outstanding parental involvement in pupils' holistic metacognitive development. Indeed, parents support their children in the selection of thinking competencies outlined in the pupils' learning/thinking diaries. This exceptional parental involvement also includes parents giving lectures to pupils, sharing advice with teachers, and strategic planning (including Thinking School Accreditation). As a consequence of these actions, parents are well equipped to support their children's learning at home.<sup>5</sup>

VTEL has forged a number of partnerships underpinned by a Thinking Schools focus in order to share and promote metacognitive approaches. The school runs 'open door' meetings for parents and children from other schools where the Headteacher presents VTEL's Thinking

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<sup>3</sup> Ibid

<sup>4</sup> Reflective Proforma, Digital Drive Evidence

<sup>5</sup> Ibid

School developments, activities, and principles. This is an interactive process that offers plenty of opportunities for questions and answers. Close links with local universities and colleges clearly show that VTEL is a sought-after internship placement due to the excellent reputation the school has. VTEL plays an active role in the Erasmus+ and Nordplus projects such that teachers from the school go on placements abroad in order to present how they apply a Thinking School pedagogy. In addition, the highly trained and experienced Headteacher regularly shares her teaching and leadership experience at conferences. The school also leads workshops for a range of colleagues across the city incorporating a rich variety of technical and methodological elements. As a result of sharing these experiences widely, VTEL demonstrate that they are key educational players in their locality, nationally and internationally.<sup>6</sup> Through its connections with these stakeholders, VTEL conveys a positive, caring and creative atmosphere, demonstrating that careful thought has been put into its organisational structure and visual presentation.<sup>7</sup>

### **Senior Management and Whole School Commitment**

The inspirational and high profile Headteacher has made a formal commitment to cognitive education as part of the school's development priorities and communications within the school and more widely. This is evidenced in school improvement planning documentations, booklets and displays celebrating thinking skills, school prospectus and also Headteacher reports. Indeed, the Headteacher regularly contributes to conferences and national/international journals such that she is clearly regarded as an expert in her field. VTEL's Founder is fully supportive of the initiatives and ideas of the school. As such, she is well-versed in thinking tools and meta-cognitive approaches together with underlying principles. The Founder's support also extends to the accreditation process. Weekly meetings with the Founder, Headteacher and leadership staff serve to enable regular discussion and action relating to Thinking School developments. Indeed, once a month the impact of the implementation of Thinking School initiatives and presented. This commitment, alongside the leadership provided by the Thinking Skills Coordinator, has galvanised the school's development.<sup>8</sup>

The Drive Team is comprised of a rich blend of dedicated staff. In addition, the school has fostered an ongoing formative dialogue between pupils and teachers with a particular focus on Thinking Maps, Thinking Habits, Higher Level Questioning, Thinking Caps and Thinking Keys. The aim is to refine practice so that thinking tools have increased impact on learning. Together, these aspects ensure that there is continued dialogue about Thinking Skills so that specific areas of development can be identified and acted upon.<sup>9</sup>

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<sup>6</sup> Reflective Proforma

<sup>7</sup> Digital Drive Evidence

<sup>8</sup> Ibid

<sup>9</sup> Digital Drive Evidence

There is ample evidence to indicate that VTEL is receptive to change and innovation. The development of cognitive approaches has been part of the school's vision and drive for improvement since 2018 in response to ensuring that the school had an explicit vision based upon inclusive educational values that would serve as the foundation for a strategic move forward.<sup>10</sup> A range of ways of scaffolding effective thinking and learning skills have been incorporated into all aspects of the school as appropriate spanning visual tools, thinking dispositions and questioning for enquiry.<sup>11</sup>

There is an organic Thinking Action Plan by which the agreed cognitive tools, strategies and resources are being implemented and taught across the school. The range of cognitive developments indicates that plans are aspirational, designed to empower children to progressively take ownership of their cognitive development.<sup>12</sup> Also, plans and CPD provision dovetail well and provide a clear mechanism for ongoing development.

### **Learning and Teaching**

It is clear, from the documentation provided, that Thinking Skills are embedded within the culture of VTEL. Planning and Drive Team meetings provide an effective springboard for action in order that all lessons include thinking skills. This is largely due to a clear and systematic approach. Having introduced a range of thinking tools and dispositional foci, the school has developed some exceptional collaborative learning initiatives. Critical thinking is embedded across the school and permeates into every classroom. Higher-order questioning has proved to be of great value in this respect. Of particular note, is the way the school endeavours to bring learning to life via the use of real-world examples applied subjects. Children routinely work in groups and demonstrate high levels of communication and cooperation. There is ample evidence of teaching and learning benefiting from the application of Thinking Maps, Thinking Caps, Thinking Keys, Higher-order Questioning, and Habits of Mind. Pupil workbooks and diaries promote metacognitive reflection so that all children monitor their achievement, set personal goals, and reflect on how they did.

There is a Pupil Parliament that participates in the democratic governance of the school and pupils are also actively involved in a working group that co-ordinates the Thinking School accreditation process. Collaboration with peers is supplemented by opportunities to work with a range of scientists, distinguished professionals, and pupils from other countries. In addition, pupils have opportunities to demonstrate their thinking at the annual Olympiad and other 'thinking-related' competitions. VTEL pupils typically achieve the highest standards in this regard. As a result of this excellent pedagogical practice, children show clear development in logical thinking, criticality, and creativity. Examples of children's work exhibit these qualities both graphically and verbally. There is a universal staff belief that all children

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<sup>10</sup> Ibid

<sup>11</sup> Ibid

<sup>12</sup> Reflective Proforma and Digital Drive Evidence

are capable of making progress and this further supports the school's commitment to holistic and inclusive cognitive education. This clearly demonstrates how it is one of the school's main aims.<sup>13</sup>

There are detailed plans in place for metacognitive teaching and learning so that continuity and progression is maintained. The school's pedagogical approach is informed by ongoing CPD which has been in place from the outset (since 2018). Training is progressively developmental starting with implementation strategies and moving on to systematic monitoring and evaluation of children's individual progress and achievement. Teachers from VTEL have made a number of trips to other countries to further add to the school's development. The emphasis placed on the learning environment is also clearly illustrated in the evidence provided by the school. These elements combine well with VTEL's commitment to the holistic of all children.<sup>14</sup>

Effective use of displays enriches the learning environment by encouraging a common language for learning and fostering self-regulation of thinking and learning. Of particular note is the interactive quality of displays where children are encouraged to interact with the content by selecting a particular focus for their learning. Where feasible, the school has personalised and contextualised visual displays to aid consistency, recognition and application of Thinking Skills. Children are encouraged to strive for high standards through awards and displays of high-quality pieces of work. VTEL has clear evidence of developing learning and teaching, and the innovative collaborative learning approach has been carefully embedded within lessons to encourage children to increasingly move out of their learning comfort zone. This is an interesting area for continued development, perhaps through formalising some of the successful thinking skills and dispositional qualities into self-regulatory strategies for moving out of a 'I am stuck' moment.<sup>15</sup>

### **Training**

The Headteacher is a leading practitioner and is actively engaged in education at every level. She has published widely in national and international journals and is currently studying for a Doctorate in Education. In addition to term-time training, the Headteacher runs training for school leaders in the school holidays. The Thinking Schools Coordinator (a school psychologist) is also highly qualified and experienced. She also conducts training in the field of metacognitive education. The Drive Team are well versed in the theory, application and assessment of cognitive education and psychological well-being. The highly trained Drive Team has undoubtedly influenced the focus on establishing a common thinking language and approach across the curriculum.<sup>16</sup> Training involves the whole school community and has a

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<sup>13</sup> Ibid

<sup>14</sup> Digital Drive Evidence

<sup>15</sup> Ibid

<sup>16</sup> Reflective Proforma and Digital Drive Evidence

very focused brief. In 2020 this culminated in the VTEL Thinking Model which is continuously refined. This model has five key elements:

- Creative Thinking
- Entrepreneurial Thinking
- Problem-based / Analytical Thinking
- Critical Thinking
- Reflective Thinking

Underpinning this, the school community (pupils, teachers, and parents) have created six specific reference points:

- Visual Aids
- Personality / Character Building
- Thinking Skills
- Collaborative Learning
- Reflexive Questioning
- Adapting the Educational Environment

Training and resources are closely aligned to these elements. There is an ongoing training programme in place, aimed at the development of expertise in a range of cognitive tools, strategies, and resources for established and newly appointed staff. Teachers receive differentiated and targeted training based on an audit of individual needs. New teachers are mentored skilfully and meetings across the school have a specific focus on the development of thinking skills. There is a cycle of lesson study in place that centres on the consistent use of thinking tools and this follows a clear plan. The cycle of lesson study has a research-based focus. Impact and outcomes are presented and published widely. There is an explicit focus on continuity and progression so that children's thinking is taken forward effectively through the use of key thinking tools aligned to skilful mediation by teachers. There is ample provision for staff to trial and extend approaches to the teaching of thinking. Parents are fully informed of the Thinking Schools ethos, which features prominently in the school's communications. Staff are encouraged to work together and to provide mutual support through the development of thinking generally and also through subject contexts. Good practice is shared, and lesson observations are used extensively to evaluate and share good practice in a climate of mutual support. This has involved taking more of a practitioner research approach to data collection, analysis, and application and this is an area that would benefit from further development as the school moves forward.<sup>17</sup>

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<sup>17</sup> Ibid

## **Assessment and Outcomes**

Complimentary forms of assessment spanning the formative, summative and ipsative domains are routinely used to examine the development of cognitive skills, and how these are related to learning outcomes in the wider sense have been implemented. Assessments are based on long-term focused observation and interpretation of individual children. Evidence is gathered from a range of sources based on classroom artefacts spanning a number of practical tasks, creative work and examples of thinking tools being used in action. The assessments are geared towards social, emotional, physical, cognitive and language development together with specific thinking skills. MALS is used reflectively and progressively. As such, it has a feedback and feedforward quality. In 2022, 201 pupils participated and in 2023, 299 pupils took the survey. This strong evidence base has allowed VTEL to skilfully plan and action further developments. Outcomes indicate that most pupils feel secure as learners. Where this is not the case, intervention plans, and actions, are operationalised. Achievement, motivation, and attendance show marked ongoing improvement. Parents receive regular reviews based on the data gathered in order to maintain the strong school and parent partnership. Pupil diaries and workbooks add to the reflective nature at VTEL. As a result of this excellent assessment model, VTEL demonstrates a healthy 'data informed' (rather than data led) approach to assessment to avoid assessment becoming the master of the curriculum rather than the servant.<sup>18</sup>

The school is clear that the focus on cognitive development through a whole school consistent approach to learning has improved children's attitudes, improved their enjoyment, developed their independence, contributed to high quality teaching and led to better pupil progress.<sup>19</sup> There is qualitative data from staff, pupils and parents about how the development of learning behaviours are associated with positive outcomes for pupils and are associated with academic outcomes and improved motivation. The school's own internal analysis and presentation of these outcomes reflect a positive examination trend, together with internal growth, and demonstrates transparency and aspiration for further improvement.<sup>20</sup>

## **Evaluation of Programmes**

There is a continual review of the range of cognitive tools, strategies and resources employed, with specific reference to their impact on pupils' meta-cognition and the transfer of skills, strategies and learning behaviours. This makes effective use of the SPARE wheel model of illuminative evaluation on which the Thinking School approach is based. Teacher Microclimate Evaluations are undertaken in order to feed into the ongoing development of motivation, interpersonal relationships, autonomy, and organisational structure. Pupil Microclimate Evaluations are also undertaken in order to feed into the ongoing development

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<sup>18</sup> Ibid

<sup>19</sup> Reflective Pro-forma

<sup>20</sup> Digital Drive Evidence

of pupils' well-being, self-understanding, and motivation to learn. Outcomes for both processes are routinely high. Parents are also surveyed with follow-up interviews being conducted. The outcomes of this exemplary evaluative practice have a clear and strongly evidenced conclusion: 'The opinion of the whole community – teachers, pupils, parents – is that thinking has become part of the school culture, which we need to nurture, improve, and keep everyone thinking about thinking'. Through a collaborative approach to leadership, the Drive Team have established a culture of thinking and school improvement built on regular opportunities for staff to discuss the process and efficacy of cognitive education and how it can be maintained and improved. There is a genuine feel that 'this is the way we do things around here'.

### **Ownership**

There is no doubt that VTEL has made a full commitment to developing and embedding cognitive education throughout the school. From the initial introduction of cognitive tools and practices, the school has carefully and judiciously expanded their repertoire of cognitive pedagogy. There is evidence that the school is beginning to distil and integrate these practices both in how they are used together and in the way they have become part of the thinking culture throughout the school and across roles and ages. Through the careful and progressive introduction of cognitive tools and CPD geared towards developing teachers as skilled mediators of learning, linked to the school's vision and values, the school has laid a strong foundation that ensures the whole school approach to the teaching of thinking flourishes. The Thinking School ethos is alive throughout the school and has done much to ensure that learning is an active process. Teachers, pupils, and parents combine to effectively promote the educational growth of all children by providing them with ownership over their own development. Teaching and learning at VTEL has moved from being an educational process to being an exemplary pedagogical culture such that the school stands as a beacon of meta-cognitive excellence.

VTEL is a truly inspirational educational community. It has skilfully developed and nurtured its core values so that they permeate throughout the entire school and beyond. Staff and children think deeply about what they do, and levels of collaboration are exceptional at every level. VTEL places a high premium on continuous whole school development and innovation and the exceptional leadership model has secured exemplary impact. This places VTEL at the forefront of educational provision and the school stands as a beacon of metacognitive excellence. As a result of this high-quality educational provision, all children achieve the highest holistic standards. This has not been at the expense of psychological well-being and the school community interact such that this element flourishes. VTEL is clearly well positioned to become an Advanced Thinking School in the near future.



## **Conclusion**

The range of evidence submitted undoubtedly indicates that Vilnius Technology Engineering Lyceum meets the criteria set by Thinking Schools @Exeter as a Thinking School and demonstrates a true commitment to the continued development of a whole school approach to the teaching of thinking. I therefore recommend that accreditation be awarded until May 2026.

I would like to thank the school for the clear and judicious evidence base, clearly organised around the evaluation rubric, that provided the lens through which the excellent practice could be viewed. It has been a privilege to undertake this evaluation.

## **Further Recommendations**

I conclude my evaluation with some suggestions as to how the school could continue to develop as a Thinking School to inform a development visit to aid action planning. This might include:

- Further develop and maintain staff development through ongoing external and internal training geared towards rationalising what works best by fine-tuning the already best practice. This combination of training will secure a balance of internal self-improvement with an external freshness and perspective. This requires getting underneath cognitive tools and dispositional development to identify the underlying meta-cognitive processes that enhance children's learning and thinking.
- Further integrate thinking processes with questioning, visual tools, dispositional development, thinking routines (geared towards further developing Growth Mindset), assessment of process, assessment of product, evaluation of process and evaluation of product. This should take the form of an overview for how these elements are integrated. This would enable teachers and leaders to have a clear overview of metacognitive development as a whole.
- Further extend lesson observations to include key indicators of learning and thinking processes. These need to be simple, clearly observable and made explicit to all staff. The work of Project Zero (Harvard University) is a particularly useful source in this respect. These indicators of thinking development can be utilised both formatively (ideally in 'real time') in order for teachers to provide feedback at the point of need, and summatively so that teachers and leaders can monitor and evaluate impact.
- Add the internal use of effect sizes at an individual teacher, team, and whole school level to further strengthen the quantitative robustness of data in order to supplement high quality qualitative data. This will allow impact comparisons of meta-cognitive strategies and feedback with the work of John Hattie. The key evaluative questions are 'What works best?', 'For whom?' and 'How?'. A multi-method approach to data may serve to get to the heart of these questions and focus group interviews are

particularly effective in generating efficient data to supplement outcome and survey data.

- Move from evaluation to evaluative research to further foster the development of staff as researching professionals. Shift 1 is to move from a self-evaluation processes that produce objectives to ones that generate research questions of the style 'How can we/I improve...?'. Shift 2 is to ensure that all staff sustain the 'open door' philosophy and remain open to evaluating their own impact in an honest and self-critical way. Shift 3 means providing opportunities for best practice impact to be made public. To gain accreditation as an Advanced Thinking School, researching professionals are expected to offer articles relating to best practice to publications such as the school's magazine, local newspapers, the school website, and professional publications. Other forums where impact can be made public are leader/teacher learning communities and action research seminars. The SPARE model of evaluative action research is a useful framework through which to apply evaluative research at all levels of leadership and classroom practice and could easily be applied to the evaluative protocols already in place. Thinking Schools@Exeter is well placed to support in this regard.
- VTEL may want to consider the further development of the school website by introducing a dedicated Thinking School drop-down menu where the excellent practice and impact can be accessed.
- Use the criteria of an Advanced Thinking School to frame future developments, in order to deepen and extend the understanding and expertise of VTEL. In particular, the extension of practitioner research through wider dissemination of the SPARE model of illuminative evaluation may provide a vehicle for further contextualising cognitive approaches to find out what works best, for whom and how.



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**On behalf of Dr Judith Kleine-Staarman, Director of Thinking Schools @Exeter**

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