

The European Trial of the
Teachers Inspiring Lifelong Learning (TiLL)
Online Self-Assessment and Accreditation Tool



TiLL

Output 4: Pilot Test of the TiLL tool

February 2020

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1. Introduction

The Teachers Inspiring Lifelong Learning (TiLL) project is focused on developing a lifelong learning European qualification for teachers at all stages of their careers. The project began with investigating the current conditions of initial teacher education (ITE) and continuing professional development and learning (CPDL) across all the European Member States and some aligned states, including analysing how existing programmes do, or do not, prepare teachers with the competencies needed for future education and/or build the desire amongst teachers to be lifelong learners to gain these qualities.

The research¹ shows that, except for a few countries (Finland and Ireland), very little attention is being given to the lifelong learning of teachers. There is a lack of recognition of the importance of the development of fusion skills and the professional learning programmes are largely based on subject knowledge and behaviour management. As a result of the initial research a competency framework for Lifelong Learning was developed. This is now referred to as the TiLL tool. The tool has been trialled with over 150 teachers at different stages of their careers to determine the relevance and efficacy of the system. Reports of the trial have been compiled.

The TiLL tool is an online system of four related competency lifelong learning competency areas. The tool allows teachers to assess themselves against criteria based on the fusion or future skills they need to be able to effectively inspire lifelong learning in both themselves and in their pupils. Aimed at a European-wide accreditation qualification, the online TiLL tool is also intended to be supported by a system of peer- and school-based assessment of lifelong learning portfolios. These can be moderated through local verification organisations ensuring both rigor and consistency, while supporting self- and peer-assessment and reflection.

The online prototype enables meta data to be collected which shows individual, local, national and international skills shortages or needs of teachers and can be nuanced by stage of career, phase of education, national and regional levels. This means that policy makers and individual schools can effectively target the Continuing Professional Development and Learning (CPDL) of teachers, leading to more bespoke and relevant training and less wastage of both resources and time.

According to Andreas Schleicher, Director for the Directorate of Education and Skills for the OECD²:

“Teachers used to be instructors, but tomorrow teachers will be facilitators, mentors’ coaches... we still build our schools like factories (we need to change work arrangement for teachers). Teachers should have the aspiration and ownership of professional standards. Teachers must be the agents of their own lifelong learning. The pupils won’t be lifelong learners if the teachers are not themselves lifelong learners. Teachers need systems for self-assessment and for connecting to fellow teachers.”

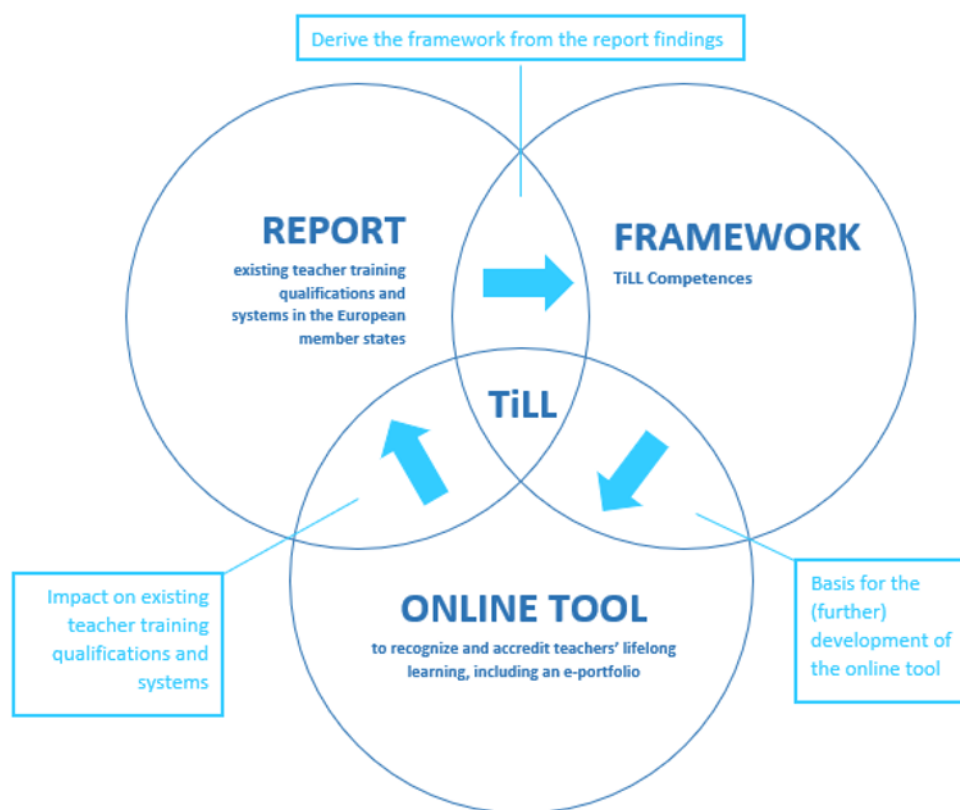
The TiLL online self-assessment and accreditation tool is designed to fulfil exactly this goal. It was developed to capture and embed the key knowledge and competencies around lifelong learning. The tool can be used both individually and collectively to build greater professional autonomy for teachers at different stages of their careers while concurrently providing the resources and virtual environment

¹ http://www.till.org.uk/wp-content/uploads/2019/04/Country-Study-Report_Output_1.pdf

² Keynote address in Seoul South Korea, October 23, 2019.

for sustaining greater collaborative cultures, where teachers work together as a team across schools and across countries. The focus is on teacher autonomy, but with this aligned to criteria-based assessment linked to objectives to promote reflection, collaboration, aspiration and inspiration.

The TiLL project has had several stages. Initially an investigation was conducted to determine the current situation for teacher mobility and lifelong learning in the European context. This research looked at the provision in all Member States and several ‘comparator’ countries to determine the conditions for a successful European qualification for teachers’ competencies. Based on the shortcomings, challenges and recommendations emergent from this research, the team began to look at which competencies were vital to current and future teachers. This part of the process involved the detailed investigation of exactly which competencies and how they should be arranged and grouped. Once these were agreed, further exploration occurred of competency descriptions, criterion-based measures, levels of attainment, evidence collection and presentation, documentation and arrangement of evidence, assessment, levelling and quality assurance procedures. The tool was designed based on this initial research and then pilot tested and refined through a series of focus groups and virtual participants. Following this process, the group met again to further refine the tool and to build consensus around the tool. Once the fundamentals of the TiLL tool had been agreed, the website was designed and developed as a prototype test website to enable larger scale testing. This larger scale user-testing for reliability occurred from September 2019 to December 2019, when the website, TiLL tools, and associated resources went live. The interconnected and iterative stages of the TiLL process are outlined as follows (Figure 1.1) showing the interrelationship between the three key



elements of the TiLL project – that is, the reports, frameworks and the online tool:

Figure 1.1: Diagrammatic model of the TiLL project

Links to the report, the framework and the online tool can be found at <http://www.till.org.uk/till-programme-documents/>

The TiLL tool was tested in France, Italy, England, Sweden and Belgium. It was also available via the world wide web and initial stakeholders (outside the specific pilot groups) were also invited to complete the tool. To accompany the tool there were evaluation questionnaires, focus groups and online responses. The aim was to determine from teachers at all levels of experience whether TiLL was applicable, reliable, and trusted. It was also an opportunity to consider ways to accredit the learning surrounding the tool nationally, across Europe, and ultimately internationally. As questions were also asked about the usability and design of the tool, it was an opportunity to investigate how the use of ICT competence can be integrated into the TiLL qualification.

This output (Output 4) is the report of the outcomes and impact of the three-month trial of the TiLL tool. The report is divided into four main sections. The first section reports the process around the trials. The second section capture the 'design' aspects of the tool in terms of how it worked. The third section focuses on lifelong learning and the impact of the tools on the teachers who completed it, while the final section makes suggestions and recommendations for the future and includes a risk assessment.

2. Context

The world of work and the skills required for that work are changing rapidly. Yet despite this, there have been very few changes in the ways that teachers are being prepared and how they are supported to be lifelong learners themselves. Almost no attention is paid in current models of teacher development to the role of technology and Artificial Intelligence even though these are now a ubiquitous part of life and are often used in European classrooms.

There are some very significant developments in AI and education such as Georgia State's Graduation and Progression Success program which uses AI to send educators alerts - based on big data analyses - when students are off-track or in need of support. The University of Nebraska uses intelligent analytics to improve results and has reported an increase in graduation rates by 3.8% in four years (Hobson Starfish). Another example comes from Ofsted (the schools inspectorate in England), in which predictive analytics are used to detect schools in most need of further inspection. AI is increasingly being used to also perform administrative functions including tools such as 'Jill Watson' (Georgia Tech, USA) and Ada (Bolton College, UK) - both based on IBM's Watson, which can answer student and teacher questions, streamlining back-office functions. In adaptive Learning Platforms such as CENTURY Tech, AI is used to learn how each individual student learns and to set out a personalized learning path for each student, providing learning support through access to a vast library of learning content. The automated essay scoring program, The Intelligent Essay Assessor (IEA) uses a technique called Latent Semantic Analysis, in which word usage is statistically modelled. This allows for texts to be compared and evaluated and essays to be graded. There is some evidence to suggest that it can outperform human graders in certain contexts.

AI is not only making some of the roles of teachers easier and more automated, it is also directly changing the way the pupils will learn and challenging teachers with the need for greater lifelong learning. For example, greater development of the fusion skill of 'collaboration' is the focus of a platform known as Habipro. This platform supports learners to be engaged in collaborative projects

by detecting learners' problems and misunderstandings, identifying off-topic interactions, and activating passive students.

These are just a few of the many examples of how technology is changing the role of the teacher and changing learning. To be adequately prepared for these changes, teachers must themselves be lifelong learners and promote lifelong learning qualities in the children and young people they teach. But the generally held view is that the school and education systems have not kept pace with the sorts of radical changes effecting how people live and work.

While the design of the school curriculum is a factor in the inability of teachers to focus on fusion skills development, there were more general criticisms of teacher education and workforce development. Without high quality and skilled teachers, transformation of education was unlikely, as summarised in this reflection about the OECD's E2030 Learning Compass for curriculum and broader educational reform:

"The model puts children's future learning at its heart, appreciating that this [reform] will only be achieved through a high quality and flexible teaching workforce who themselves are open, lifelong learners who possess the skills and knowledge needed for education in 2030 and beyond. We need dynamic teaching, attitude change and agility."³

In most of the economically advanced countries there is a teacher shortage and teachers feel they are not generally adequately prepared as a future profession⁴. There are difficulties in recruiting teachers and in retaining teachers. This shortage has also raised questions around quality of teachers and concerns over the lack of lifelong learning competencies of teachers when compared to other professions. The shortcomings in the professional development of teachers is well outlined in this comment made by a teacher educator at the first of the TiLL multiplier events:

"Only 30% of teachers are qualified to teach computer science. Teacher education should be modelled around hackathons. We need teachers to develop the fusion skills and we should celebrate the time it takes to develop a good teacher. Undergraduates want to pass quickly. Secondary teachers are worried about what and who they are, and this leads to anxiety. Primary teachers are generally on it. They make learning more dynamic. How can we use the skills in primary teachers to rollout fusion skills-based learning in the secondary schools?"

Moreover, the initial TiLL research shows that while other professions are moving to more flexible, 'portfolio' careers, there is limited teacher mobility and almost no opportunities for teachers to gain future competencies through formal or informal practice-based learning opportunities. The comment was made that learning needs to be future-focused and prepare people for the workplace of the 21st Century. Suggestions were made that teacher education needed to improve to be able to deliver the vision of E2030 and that the models should also highlight the importance of learner agency, including greater individualisation of learning models and approaches.

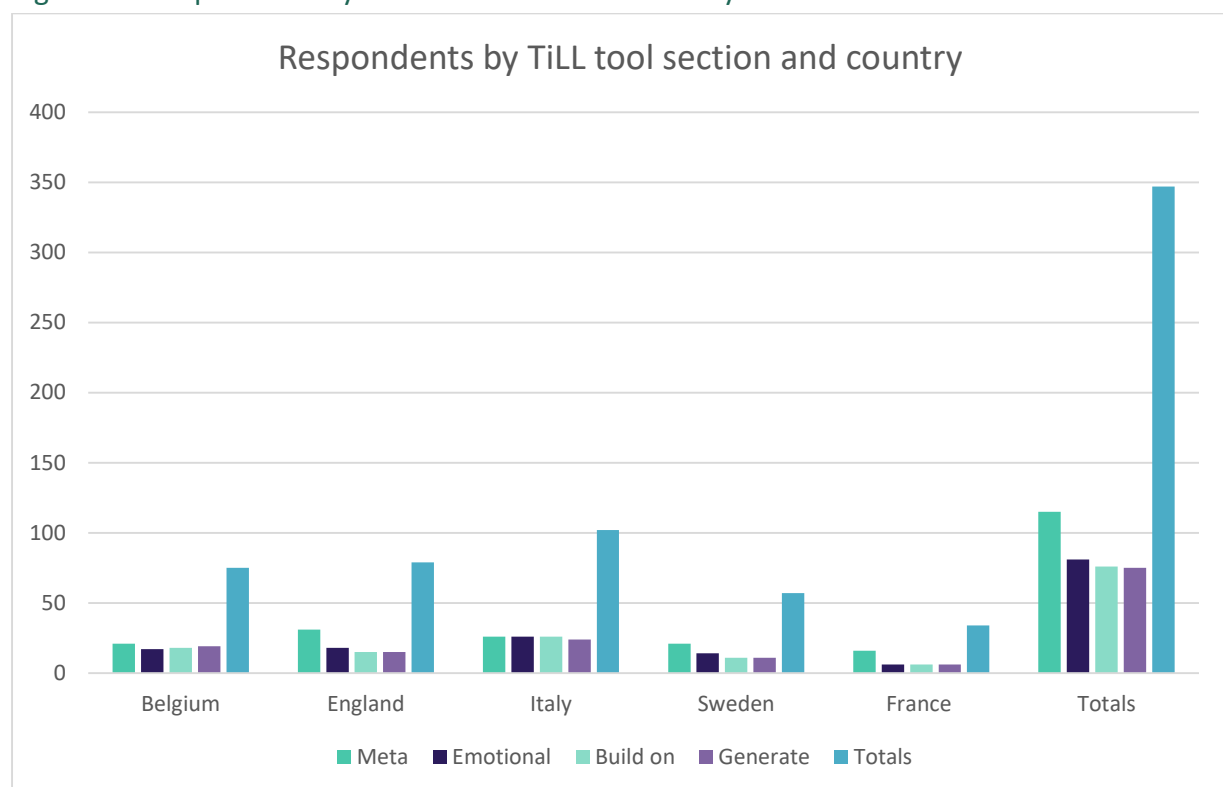
³ Andreas Schleicher, Director for the Directorate of Education and Skills for the OECD, Keynote address in Seoul South Korea, October 23, 2019.

⁴ http://www.till.org.uk/wp-content/uploads/2019/04/Country-Study-Report_Output_1.pdf

3. The TiLL Trial Process

In total, there were 347 responses to the TiLL tool at the time of publishing this pilot report⁵. The following diagram (Figure 3.1) shows the breakdown of participants by countries and by section of the TiLL tool. The highest number of teachers completing the TiLL tool came from Italy and the lowest number came from France. The light blue column at the end shows the total of responses for each country.

Figure 3.1 Respondents by TiLL tool section and country



The teachers involved represented a range of experience levels including pre-service teacher education students, newly qualified teachers, experienced teachers and senior school leaders. In some cases (mainly Belgium) support teachers also completed the tool.

The pilot study was conducted in the 'autumn' school term of the 2019-20 academic year and commenced in September 2019 and was completed in January 2020. The tool is still live, meaning that teachers can continue to complete the tool after the end of the 'official' pilot period.

The pilot phase was conducted through different means to ensure a range of responses. These included:

- 1) Whole group, face-to-face multiplier events
- 2) Small focus group style sessions
- 3) Independent completion via online support

⁵ The TiLL tool remains live and so teachers continue to complete the tool subsequent to the official pilot period.

While the intention was that all respondents would complete the online tool, due to language difficulties in Sweden and Italy (the online tool was available only in English at this stage), some respondents also completed paper-based versions of the tool in their mother tongue. This was not desirable as this meant the respondents completing the paper rather than the online versions did not receive the self-assessment summary, which was automatically generated by the TiLL tool.

In terms of process, the following strengths and weaknesses emerged:

Strengths:

- The tool was quick and easy to complete
- The tool stimulated interesting professional conversations
- The tool was suitable for all levels of teachers
- The tool was comprehensive and detailed
- The tool could be repeated at different stages of one's teaching career
- The tool could be used to both measure the teacher's lifelong learning but also how teachers inspire pupils' lifelong learning.
- The tool could easily be combined with evidence to make an accredited tool

Weaknesses:

- The tool needed to be translated in languages of the countries
- Even with translation the language in the cognitive section was quite difficult for some teachers to understand
- The use of a five-point, descriptive scale was sometimes difficult to understand, and the suggestion was for a 10-point rating scale

The following sub-sections report each of the multiplier and pilot events in each participating country.

3.1 Belgium

In Belgium there was a total of 26 respondents, with 11 being from a primary school context, five in a middle school, 10 other respondents. Of the 26, 10 identified as classroom teachers, 10 as support teachers and six as 'other'. There were 22 females and four males

In Belgium there was not an 'in person' meeting. Rather respondents were single individuals who were asked to do the self-assessment test online. They then answered an additional feedback survey. It was very difficult to find teachers willing to participate. The reason was that there is a lack of teachers willing to participate in the schools. Schools are under pressure and teachers also feel under pressure. They mentioned an overload of administrative work and tasks and, in their perception, the test was viewed as yet another administrative task.

Some teachers requested to get a translation of the test and so they received a Dutch translation. Most of the participants were from the Antwerp region, with all of them resident in the Flemish part of Belgium.

3.2 England

The pilot test process in England was conducted in three main ways. Firstly, in person meetings were held. These coincided with other meetings to make it easier for the teachers attending and were all group sessions. The second was via email, where teachers who had previously shown interest in the

TiLL project or had participated in the initial design of the tool were asked to complete the tool and distribute it to other teachers to complete. The final approach was via an open call for teachers to complete the tool and each person completing the tool and the surveys received a shopping voucher in recognition of their time to complete the TiLL tool. In all cases, as well as completing the tool, they completed an online and an email survey. All the responses came from England, not other parts of the United Kingdom. In total there were, 82 respondents who completed section responses from the UK with 15 respondents who completed all the test components. Because the test could be taken in four parts and these did not naturally flow from one to the next, some respondents completed one or more of the tools but did not complete all the tools, as they were unaware that the tool had the four distinct parts.

3.3 France

The first pilot session in France was carried out with nine persons (2 male and 7 female) who received the presentation of TiLL and the process of pilot action and filled the online questionnaire. Six people (1 male and 5 female) participated in the in-site collective session. Most of them were teachers at high-school and some at college. Teachers were from various disciplinary backgrounds: physics, social sciences or vocational education. One had around 10 years of professional experience, other teachers had more than 20 years of work experience. Two of the teachers had high levels of responsibility in their institution: pedagogical responsible and coordinator for mobility.

The participants were previously asked to read the presentation of the TiLL project and the process of the pilot action, as well as the European Qualification for teachers' competences for lifelong learning. After having completed the questionnaires, participants were asked to join a collective work session on September 27, 2019 for four hours (13h-17h). The Freref team presented briefly the TiLL project and objectives. Then participants went again through the questionnaires, making some comments on specific questions. After debates on how to translate some questions or concepts included in the questionnaires, more general feedback was given about the project approach and how to implement it in the current educative system.

Major needs were identified by the participants included:

- The TiLL tool would need institutional partners like school heads or Grenoble Académie, to implement such actions within continuous training of teachers or for in-training teachers, or IPR (regional pedagogic inspector).
- There is a vocation crisis for teachers in France. A part of this problem is that teachers have fewer and fewer opportunities to receive training.

The organising institution (Freref) also identified needs and obstacles, including that they struggled to reach a high number of teachers for many reasons:

- They have no time
- Not all teachers speak English
- There is no institutional support
- There is no awareness raising about European project as pedagogical opportunity
- All the teachers participating were quite experienced and the target group of young teachers or in-training teachers were hard to reach

Some ideas to improve the TiLL tools and continue the project were evoked including:

- Translation of the questionnaires
- Improvement of the presentation of results (spider web by area of competence)
- Proposition of concrete application of competences
- Working on institutional support

After this session, most of teachers were willing to spread the TiLL initiative among their colleagues and the two responsible officers and coordinator showed a strong interest in pursuing cooperation with Freref on the TiLL project. At the end of the session evaluation questionnaires were distributed.

3.4 Italy

Italy held two Multiplier events. One was conducted on September 20, 2019, the other on October 10.

During the first Multiplier event, about 100 teachers, equally divided between kindergarten, primary school, middle school and high school teachers, attended an explanation of the TiLL project and the presentation of the self-assessment tool for teachers. The sample was selected by a group of teachers in lifelong learning (specifically, in this case, in training to become support teachers), who were following a series of learning psychology lessons at the University of Modena and Reggio Emilia. Of these, 55 teachers joined the compilation of the tool on the Google form platform. The administration of the tool was followed by a series of questions relating to the adequacy and comprehensibility of the tool, to which the teachers responded individually through the form. The data obtained were collected and processed anonymously.

The second Multiplier event, designed to diversify the sample from the previous one, involved a target group of teachers of different ages and experience levels. About 30 students in training to become teachers were involved, who however had already had internship experiences in kindergartens and/or primary schools. Again, the students were participating in a psychology course at the University of Modena and Reggio Emilia. In this case, 25 students - after a short presentation of the project and of the related tool - completed the self-assessment from their computers or electronic devices, by logging directly on the TiLL website. After completing the tool, they were given a paper questionnaire containing the same questions about the adequacy and comprehensibility of the tool, which the teachers of the first Multiplier event had answered online. The questionnaires were completed individually and anonymously and were collected at the end of the lesson. The data obtained from them, in accordance with the previous ones, was processed anonymously.

The following figures show the characteristics of a sample of the Italian group (N=55):

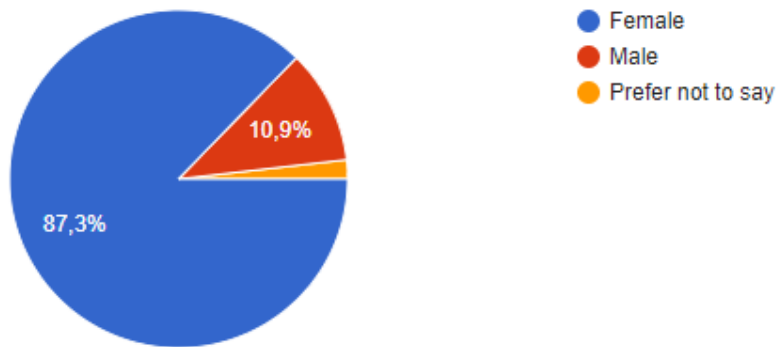


Figure 3.4.1. GENDER

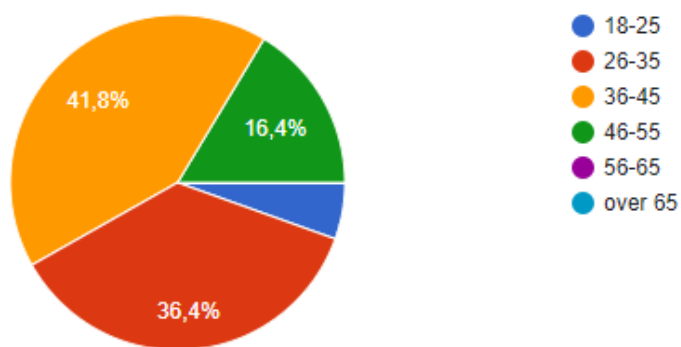


Figure 3.4.2. AGE

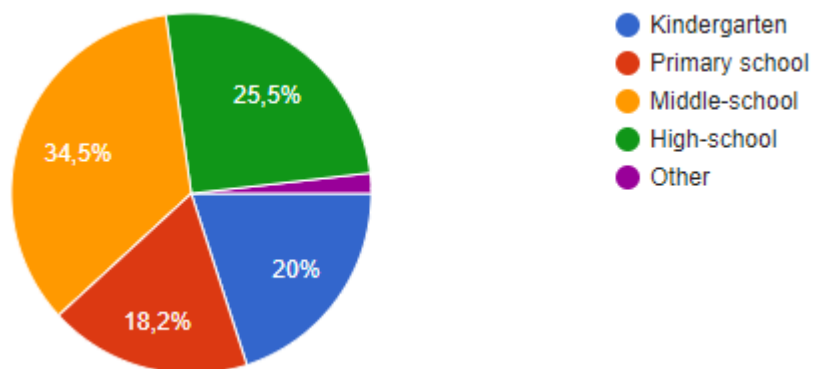


Figure 3.4.3. SCHOOL GRADE

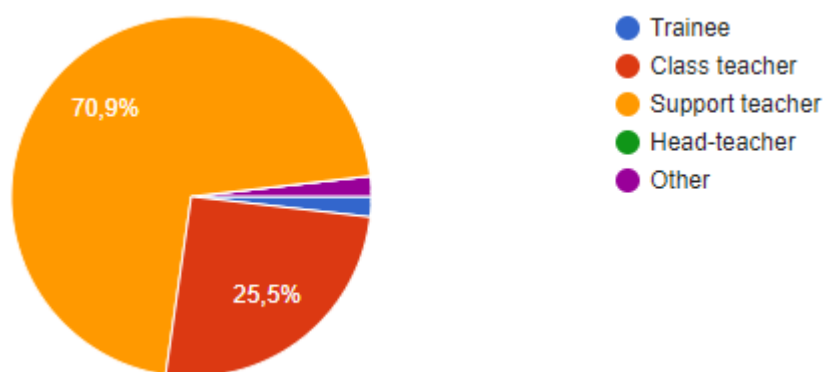


Figure 3.4.4. ROLE

3.5 Sweden

The multiplier event in Sweden was carried out with more than 25 persons. Single individuals or small groups of people were asked to take the self-assessment test and were interviewed after completing the tool. The teachers were all on different levels and from different subject areas. Some of them were asked to just do the test with a shorter feedback afterwards, others were interviewed more thoroughly. The sample was a selected based on volunteers from the Swedish partner's networks to find students, teachers, heads and teacher educators that would like to participate on relatively short notice.

In Sweden, a group of people also did the test by themselves. They were given the link to the site and made the self-assessment test on their own. Following feedback, it was decided to follow the actual testing more closely. Initially the main reason was so that it could be translated it into Swedish as needed. But, by being present for the test itself, it was possible to find more efficient and valuable ways for the target groups. Therefore, the way Sweden administered the testing altered a couple of times while testing.

The first two tests following that initial procedure was carried out with a teacher in upper secondary school and a researcher in Education. They were both interviewed individually, and the answers were marked directly in the online tool. They were positive and identified areas that could be improved.

In addition, a Teacher Educator filled in the answers online with the interviewer sitting next to her. After she had completed the test, she expressed that in order to motivate teachers to take the test there would need to be some external assessment.

Because of the response from the completed interviews, minor adjustments were made to the test method and then a new set of teachers completed the test. This time, the four sections of questions were in a paper booklet so that the interviewed could mark the levels that suited with a pen (afterwards all tests were then uploaded in the online version). The teachers' reactions gave courage to continue that way and a modified version was then presented for the rest of the teachers in the pilot study.

In this slightly updated version, spaces were just put in between the questions to give room for comments and at the end of each set there was space to sum up abilities, to develop, or investigate further. At the very end of the booklet there was room for comments or areas to develop which could be used as an overview. This version gave a quite different response. At the end of this testing period,

there was a small focus group with two teacher students. They did the test while discussing meaning and levels. It was also discussed how and when this tool could be used for teacher students.

Out of the comments, the conclusion was that the TiLL tool in general has great potential to identify competences that the person taking the test can develop. The test can be improved by adding: an overview, a structured procedure and a more explicit connection between the different parts in the test.

It was remarkable to see some of the teachers' positive reactions after taking the test. They became aware of their strong abilities, hence what they already can or know. Comments like "Hmm...so I am actually not that bad then..." followed by positive reactions on their own teaching methods. This tool could be important for a pride that could stimulate their lifelong learning.

Some of the interviewed teachers said "Ok, I know how, but the classroom context makes it impossible to carry out..." and they were unsure where or if that connected to one of the other questions in the self-assessment test. The logic of how these sets of questions are supposed to interact is not obvious at this moment and sorting that connection out would probably help the person analyse their own situation even better. It is important for the teacher to understand what is possible to change or influence and what is not, i.e. "I know how to... but the circumstances make it hard to implement it".

According to their comments while using the booklet version the interviewer understood that the overview is important when one wants to reflect on the theme. These self-analytical comments did not come up when doing the tests digitally. When asking if their overview would be interesting to discuss with colleagues, they all said yes and that it also would be practical when doing the test again and again.

Some teachers asked for help to sort out what could be done as a second step, knowing one's "score". When answering the question themselves they said that their working group probably could help sharing knowledge and ideas and discussing whether each and every ones' chosen level is "correct" or not. A suggestion is to develop a "next step" that can motivate even more teachers to do the test.

The teacher students said that the self-assessment tool could be a good way for a student to understand required abilities for the teaching profession. They suggested the tool to be introduced year two (out of five) and then return to the TiLL tool in their last year and then repeat it continually.

There are clear benefits for teachers taking the self-assessment test, especially if the person afterwards can discuss the test result with peers. This could be done in any school form and the implementation can preferably be structured by the school board, headmaster or a person being responsible for school development.

The interviewed teachers in general think lifelong learning and fusion skills are important areas to improve but more work must be done to adjust the test to be even more logical. There is also a need to motivate individual teachers do take this self-assessment test since there are few others which identify this specific ability. With these modifications TiLL could be a tool that would inspire teachers and teacher students to lifelong learning.

4. Design aspects of the TiLL Tool

The first sections of this part of the report capture comments made about the general design features of the TiLL tool, the competencies themselves, the rating scales and the language used.

4.1 General design

It was generally agreed that the website provided a good introduction to the TiLL project and to the tool. The importance of lifelong learning is well explained but it was suggested that the tool itself could be more directly connected to the benefit of self-reflection, since this is one of the main ways the project promotes the development of these skills. Focusing on the importance of lifelong learning could make the self-assessment 'value' of the tool clearer. This is explained well under the self-assessment tab, but the viewer is more likely to read that part in the first place if the home page makes them think that it will be a useful tool. The viewer of the website should find the two reports and the self-assessment tool easily. One respondent felt that more detail was needed in the introduction, namely, "I don't find the detailed description of the possible target groups, nor the benefits and the description of the process." Some respondents wanted more details of the project as a whole. For example;

"It is easy to understand the purpose of the website, but the description does not fully cover the project's aim. The focus lies on the online tool and also the framework gets mentioned, but what about the report and everything in the background that leads to the final online tool etc.?"

"I wanted to learn more about the history/background of the project. That would be nice here: project development (who, when, where, what, why?); charter members?"

"The document names could be longer and more coherent to make it easier for the user to navigate and to know what to expect (title, author, keywords, small image or pictogram, ...)"

In terms of completing the self-assessment tool, there needs to be more clarity when you are finished. While an email is sent once each of the four tools is fully completed, it was suggested that there needs to be something on screen in addition to receiving the email. For example, "We got indications that the test could be improved by adding: an overview, a structured procedure and a more explicit connection between the different parts in the test."

Some of the participants felt that the questions were very categorical and were not sufficiently nuanced.

"The interviewed teachers think that most questions are comprehensible. Some questions asked for knowledge that the interviewed have, but some of the interviewed teachers were frustrated as they cannot act upon their knowledge due to lack of resources in the classroom. They have wondered where that is recognized in the test."

Generally, the teachers completing the tool found it to be quick and easy. While the speed varied slightly according to internet speeds, on average it took less than 15 minutes to complete the four tools, with an average speed per tool of slightly under four minutes. It is possible to do one tool at a

time or to do all four tools in one session. The teachers felt that the tool described the main areas of competency but that they could be even more visual or logical connection to demonstrate how all the questions and areas related to one another. The French respondents felt the test was too long:

"The questionnaire is too long – should put an indicative duration".

A consistent point was made by participants as to whether the design of the tools could, in and of themselves, embed the skills by completing them (in the way the tool has embedded IT skills). This is exemplified in the following comments:

"Could the design of the assessment tools themselves embed the fusion skills? For example, could the assessment tools require creativity or higher order cognitive processes at different levels as part of their design?"

"Could the tool itself help teachers improve by doing them?"

It was suggested that there was a need for greater focus on an innovative design of the tests to ensure that they themselves embed the key competencies. It was noted that the use of AI or more interactive design could boost the capacity of the test itself to gather the evidence of the teacher having the lifelong skills. For example,

"Could technology assist in this regard... for example, 'test' oral communication quality?"

"What can be automated and what requires human intervention/physical evidence?"

Respondents also suggested that there were innovative examples of embedded lifelong learning in other contexts, such as adult learning in business and workplace learning in some industries.

"Look at innovative examples in the adult education space – design the tests and their administration and evidence base to interactively test."

A five-point 'descriptive' scale was used which ranged from novice to expert. Some of the respondents felt that it would be better if a 1-10 scale had been used, rather than the narrative descriptors, as these comments suggest:

"I would use a 1-10 scale as the novice etc needs a clearer explanation."

"A grading system, say 1 to 10, would be more user friendly."

"Work with a scale from 1 – 10"

"Give only four options instead of five so that you really have to choose, otherwise there is a tendency to take the middle one"

Several teachers pointed out that they want an option to freely comment on the answers. It was also noted that the use of terms such as 'novice' and 'expert' also made self-assessment more challenging.

"Clarification is needed on the choices. It is hard to know what level I am, and these could be clearer, and we need reminders on each of the survey pages."

"It was not so clear what was meant with the different levels as expert, etc... When are you an expert?"

"Maybe place an explanation about the possible answers: what does novice/ intermediate/ ... mean? ... novice = I think I can/ am able to..."

"These options were not always suitable as a response to the questions – a confidence rating might have been better (as you can know a lot about an area but not feel confident to apply)."

In the Italian pilot, half of the participants considered the response options to be unclear (e.g. "What do you mean by an expert?"). It was suggested that adding appropriate descriptors of each option or, better, substituting them with a Likert scale for the teachers to rate themselves would be more effective. Moreover, many participants asked for the Italian language version and a richer display of results (graphs and text).

"The answer options leave a fair amount of freedom in self-assessment, perhaps too much. How can I quantify objectively ""advance"" or ""expert""? Personally, I would have preferred a scale of 1 to 10. If possible, consider adding an open answer."

A couple of the interviewed teachers in Sweden asked for a clarification of the differences between "newcomer" and "novice" and wondered whether that was significant. Some also asked what level to compare with, i.e. "Should all be on 'intermediate?'" When answering that question themselves, some said their team could discuss an appropriate level, others suggested a more individualistic approach where they would like to continue to develop their strong abilities to keep their motivation high.

It was also suggested that the way the summary reports were presented to teachers could be enhanced.

"Change the results to obtain a spider web picture with area per competences area and not by level, because participants are not finding this form of results very useful. Maybe add recommendations on specific resources for competences not mastered."

4.2 Language

There were several problems with the language of the tool which were identified by the participants. The comments mainly fell into three areas, namely:

- 1) That the tool and survey in the prototype were only available in English
- 2) That, even in English, the language was quite complex, especially in the cognitive sections
- 3) Not all questions were clear

Due to the budget and time constraints of the research, the tool and surveys were only available in English. While some levels of translation were done by individual countries, the lack of other languages inhibited the number of people who completed the survey online and meant that some of the more nuanced points may not have been fully understood. In its full implementation, the tool would automatically be in the preferred language of the person completing the tool. For example,

"90% of participants described the options are clearly and comprehensibly expressed, but here more than the 50% of participants expressed the desire of an Italian version."

This was also the case in the French pilot:

"The presentation was made in the national language (French) and we provided advice for using an automatic translation of the website pages, which actually didn't work (only the first page of questionnaires was translated, and the following steps were not, and refreshing the webpage was bringing us back to the first step.) In addition to this technical problem, language appeared as a major obstacle to a massive trial of the TiLL tools. Many of teachers are not mastering either English language or ICT."

"The test of questionnaires could be done again in local language as it is perceived as a major issue for teachers above a certain age."

Moreover, the Belgium respondents made the same comments;

"Some of the teachers preferred the tool in their own language. They found the language of the tool too abstract and the wording was difficult. They preferred more concrete examples. Not every English term has an equivalent in meaning in Dutch."

There was a similar picture in Belgium as the following email exchange indicates:

"I couldn't guarantee the results because it is difficult for three reasons:

The questionnaire is in English. I guess that's largely why you have too few answers. This represents an obstacle for many teachers because even if they understand English, many will not dare to write in a language that they do not fully dominate.

The period, close to the holidays. This may play positively or negatively, but it may delay the process.

As you say yourself, teachers are usually overbooked and limited to their priorities.

So, I will attempt to contact about 20 people, but I need to translate the documents in French to make sure they'd understand well. Then, they should be sufficiently informed about the project to be able to respond satisfactorily to the questionnaire."

Moreover, even for mother tongue English speaking teachers, the language of some of the questions was very complicated as these comments suggest:

"Some of the questions are over complex and could be simplified."

"The sentences need to be simpler. Some are quite complex."

"If you were going to use this framework with early years specialists, you need to adjust the way the questions are asked. Perhaps when you choose the age group, then the questions could be modified."

"I found that some of the questions were easy to answer and really clear but other questions were much harder to apply."

"The wording is not always clear, and I think you need more examples."

"Some of the questions and the attributes are hard to understand. Need better, simple definitions and examples."

"The wording is complex. I teach four-year olds and don't really get how this applies."

"Sometimes the questions were not very clear."

"It is over complicated."

The point about needing to adjust the questions for teachers working with different age groups was also apparent in the Belgian responses. For example,

"Several teachers also suggested that not all questions are for all school grades. So that the tool could be better focused per school grade (= adult education, primary education, secondary education etc...)"

"That it does not cater for the breadth of contexts, and that it could be too easy to achieve and not have much currency in the profession."

Some respondents felt that more examples of the competencies in action were needed to help in 'explaining' the questions. For example,

"Definition and examples could come in a more coherent text that addresses the user directly and provides him with contextual information but also with a lot more examples."

By contrast, some teachers commented that the whole TiLL tool could have been more in depth and that most of the questions are comprehensible. This variation in results is perhaps indicative of the variation in experience levels of the teachers completing the tool.

4.3 The Competencies

Based on a large body of research and on the initial pre-pilot testing, the final TiLL tool was agreed to be based on four key competencies which would then be each divided into approximately 12 areas of investigation. The four main competencies in the TiLL tool are:

- 1) Meta cognition and cognitive self-regulation
- 2) Emotional self-regulation
- 3) Building on individual differences
- 4) Generating a creative learning environment

The general view of the people completing the tool was that these were a comprehensive and thorough set of competencies, as the following comments indicate:

"No, I do not think there are any gaps. I believe the four competencies are encompassing and complete."

"I believe the four competencies are encompassing and complete."

"I think it is a fair test and measures what it is trying to do."

"The teachers think the tool describes the areas but that they could be even more visual or logical connected to see how all the questions and areas are related."

Some teachers identified that specific subject knowledge and pedagogy was not being assessed.

"Subject knowledge development is key for my subject and could be linked to pedagogical training."

Another teacher noted the lack of focus on research skills.

"They are main areas but teacher competency in accessing relevant research and subject knowledge seems to be neglected. It seems increasingly important to professionalise teaching by connecting with research and best practice."

There was also a request to add more questions about how you interact emotionally with the students.

The teachers completing the tool suggested that the four competency areas were well contextualised. Some respondents argued that there should be greater reference to measurable outcomes and transparency in the selection of the competencies. The following sub-sections capture responses to the specific four competencies and relate to comments made about the specific sections on the TILL website and within the TILL tool itself.

4.3.1 Meta Cognition and Cognitive Self-Regulation

This section was generally the least clear section for the participants. They commented that the monitoring was unclear. It was also noted that the description, competence part, and examples in this section did not seem to completely go together and that this makes the evaluation statements harder to assess. For example, against the competency 'I know how to enable learners to construct knowledge and discover new meanings.' The comment was made, "This is difficult to understand what this means." Despite the challenges to sometimes understand both meta-cognition and the following section on emotional self-regulation, respondents generally considered these areas to be of particular relevance. This was particularly the case from the sample of more experienced teachers (metacognition and emotional regulation were evaluated with a score of '5' for relevance respectively by 58% and 64% of the teachers during the first Multiplier event).

4.3.2 Emotional Self-Regulation

Under this competency the respondents were not fully clear on the link between 'help-seeking' and 'emotional control.' As with the Meta Cognition section, there was a view expressed that sometimes the descriptions, examples, or statements do not fully match. Some respondents wanted a greater link in this section to classroom actions. For example, "Efficacy to Create a Positive School Climate" should be more linked to changing the classroom environment.

4.3.3 Building on Individual Differences

There are a variety of individual differences that must be taken into consideration for the classroom teacher. These include difference in ability, motivation gender, learning style, and ethnicity and culture, amongst other differences. It is also acknowledged that individual differences may appear and re appear at different points in a lifelong learning journey and in different contexts. Teachers must

adopt different ways of dealing with individual differences. This may be through varying instruction for different children, grouping the children, cooperative learning, individualised instruction or in some way modifying the conditions where learning occurs, including mastery learning. Interestingly, very few comments or questions were raised in relation to the section on individual differences. This seemed to be because this area of the assessment tool was well understood by the respondents and clearly and accurately linked to classroom practice.

4.3.4 Generating a Creative Learning Environment

The emphasis on innovation, creativity and enterprise as fundamental skills for a successful a 21st century economy is persuasive in championing the need to embed ICT in education. Employers want employees who can ‘solve a problem’, who can function in the real world, who can be relied upon to get on with a job and do it well (Deloitte, 2009 Price, 2013). However, in order to develop resilience and sustainability of such skills, the facilitation of this mindset in students is best modelled through teaching and developed in ITE or through CPDL. The teachers in the pilot seemed to be particularly pleased to see that creativity was part of the four main areas of competency as these comments echo:

“Really pleased to see creativity and creating a creative learning environment given such prominent part in the tool. Teachers are designers and creatives... teaching is a creative act.”

“Creativity is about dispositions and capacities... mindsets. These are important to teaching and to learning.”

“Fun, creating an environment for positive emotions to take place, relationships, my teacher really know me, bringing your authentic self to the schools.”

4.4 Background information

Several of the participants felt that the TiLL tool required more background information. It was suggested that the tool would be enhanced by including visualisations. For example, “an ongoing circle that guarantees a steady development of the project itself and of the (future-)teacher’s learning process...” Other participants were just looking for some overview text, and suggested:

“Maybe give a short introduction: what is this assessment about, why is it important for me to do it and what can I expect from it? What kind of questions, but also which outcome? And what will follow – recommendations for the next step of my development, ...?”

For other participants they were seeking more information on the partnership, “collaboration partners are clear, but how do they work together? How did they meet etc.?” These suggestions can be used to improve the TiLL tool before wider application.

4.5 Aims

Participants were asked to suggest what the aims of the TiLL tool were. Most of the aims suggested were closely aligned to the aims of the TiLL project team, meaning that the design made the aims clear. The aims articulated included:

- Improved competencies and capabilities
- A more process-oriented approach to competencies
- Formative assessment

- Promoting professional dialogue
- Providing feedback to teachers
- Making explicit expectations about lifelong learning for teachers and students

Some of the Belgian responses were less clear on the aims, perhaps as they all competed it virtually and so did not have the benefit of the in-person introduction experienced in the other countries, as the following comment suggests:

“It is not really clear for whom the tool is designed. Is it for the teacher or for an organisation that wants to evaluate the teacher?”

The following comment was also made by an expert completing the tool.

“The description does not fully cover the project’s aim. The focus lies on the online tool and also the framework gets mentioned, but what about the report and everything in the background that leads to the final online tool etc?”

The expert went on further to comment that:

“The purpose becomes clear, but just one part of it (online tool), what about the report and the framework? I wanted to learn more about the history/background of the project. The project development (who, when, where, what, why?); TiLL members? It would be useful to have a graphic to visualize the different aspects of the project and how they intertwine and to show where the project comes from and where it is heading.”

4.6 Self-assessment

The respondents found the self-assessment process to be both rewarding and challenging. There was a general view that self-assessment was a good place to start with the tool, but that more ‘external proof’ could be required later or if the tool became accredited. The teachers were generally not used to being asked to self-assess and some requested more guidance and support on this aspect of the TiLL tool. For instance,

“I think there needs to be clearer guidelines around the way to make self-judgements. If it is going to be externally assessed, it needs to be through evidence such as a portfolio. You have to be able to show you are enacting these qualities. There is a difference in knowing about something and knowing how to do something.”

“The fact that only you are evaluating yourself, is often perceived as not so strong. A suggestion is to add specific questions about concrete class situations, so you can indirectly see if teachers really differentiate and are creative.”

Some participants pointed out that the answers are generic and very subjective (though this second point depends on it being a self-assessment).

“Self-evaluation is sometimes a risk because of underestimation or overestimation – too subjective.”

“The main focus lies too much on self-reflection and informing the reader via articles written by experts. There is too much text.”

"The self-assessment questions did not provide me of any new insights. It was interesting though to see what level I miss knowledge and would like to improve myself. But overall, I know on what level I operate best and on what level I still need more input."

"I am not sure if the questions will stimulate individual teachers with low self-knowledge to engage themselves more."

Other participants really appreciated the developmental nature of the tools in that you could go back and re-assess yourself based on changing perceptions, different careers stages and after more learning (also see comments made under the section on the 'Development Journey' later in this report). This view is encapsulated in the following comments;

"As a teacher some days you know you have achieved good quality teaching and on other days you know you haven't so placing yourself into such definitive categories that are prescribed here is a problem. It can give rise to self-examination but needs a more supportive context."

"I like that you can do more in depth tests if you are interested."

"This online system can allow me to assess myself against criteria based on the fusion or future skills I need to be able to effectively inspire colleagues and students."

"It makes you aware of your blind spots. It helps you as a teacher being aware of the different areas. They are inspiring for the teaching practice."

Some respondents also liked the collegial nature of a model based on self- and peer-assessment. For example,

"This online system can allow me to assess myself against criteria based on the fusion or future skills I need to be able to effectively inspire colleagues and students."

Another participant suggested that there was a direct link between the processes of self-reflection and lifelong learning.

"It might be the case that the self-assessment tool is of most use to those teachers who are already working actively with lifelong learning and have already familiarized themselves with the different concepts discussed in the test. I think for someone who is working with the TILL-reference documents, for example, the tool could be useful in doing some self-reflection. For someone who is coming across some of the terms for the first time while doing the tests, some of the concepts might be a bit abstract or hard to pinpoint what they mean in practice."

Teachers completing the tool also wanted to self-reflect in 'real time' while completing the test. For example, one participant asked if it, "Would it be possible to add the option to go back a step in the test? If something later in the test makes the test taker rethink something from an earlier question?"

The value of peer discussions seemed to be highly rated by the participants. In focus groups, when asking if their overview would be interesting to discuss with colleagues, the teachers all said 'yes' and

that it also would be practical when doing the test again and again. School leadership particularly saw the value in teachers completing the tool as part of a self-reflection exercise, for example:

“We see clear benefits for teachers taking the self-assessment test, especially if the person afterwards can discuss the test result with peers. This could be done in any school form and the implementation can preferably be structured by the school board, headmaster or a person being responsible for school development.”

One teacher even went so far to say that it would be interesting if the pupils could also answer the online survey about their teacher, as is exemplified in this comment:

“Personally, I believe that it must be accompanied by a similar tool to be given to the students to investigate their point of view so that the teacher can have direct feedback on the level of self-perception they have of themselves and on their working method.”

While generally valuing self-assessment, the respondents did feel that a more rigorous external verification process would need to occur if the TiLL tool was to be linked to forms of accreditation. For example, it was suggested that self-assessment might lead to significant variation in the quality of records. Teachers pointed to the importance of independent observation and evidence to substantiate self- and peer-assessment. While the summary graphs were seen to be of value, the discussion and reflection around the tool seemed to be of more value, especially if it were to be combined with observation, interpretation and cognition. This was shown in this comment from a school leader:

“When assessing we need to look at behaviours which are observable and enacted. So, for example, how would you show creativity? Focus on the demonstratable. Break down the competencies into evidencable chunks. Perhaps this could be done through project work?”

4.7 Results of the pilot

In total there were 4,802 individual question responses during the pilot period of the TiLL tool. Of these responses 5% rated themselves as being ‘newcomers’. A further 16% rated themselves as being novices, a total of 21% considering themselves as less than intermediate. Concurrently, 13% rated themselves as ‘experts’ and 35% considered that they were advanced. This gives a total of 48% of people who considered themselves as being more highly rated than intermediate. So, in general, more people rated above the average than below the average.

The results of the responses to the questions themselves were interesting. Overall across the four competency areas, the weakest areas across all four competency groups was in questions related to assessment. The cognitive area of competencies was the lowest rated with only 30% of respondents feeling either expert or advanced. By contrast, the strongest competency area was Emotional Self-Regulation where 69% of respondents felt they were expert or advanced.

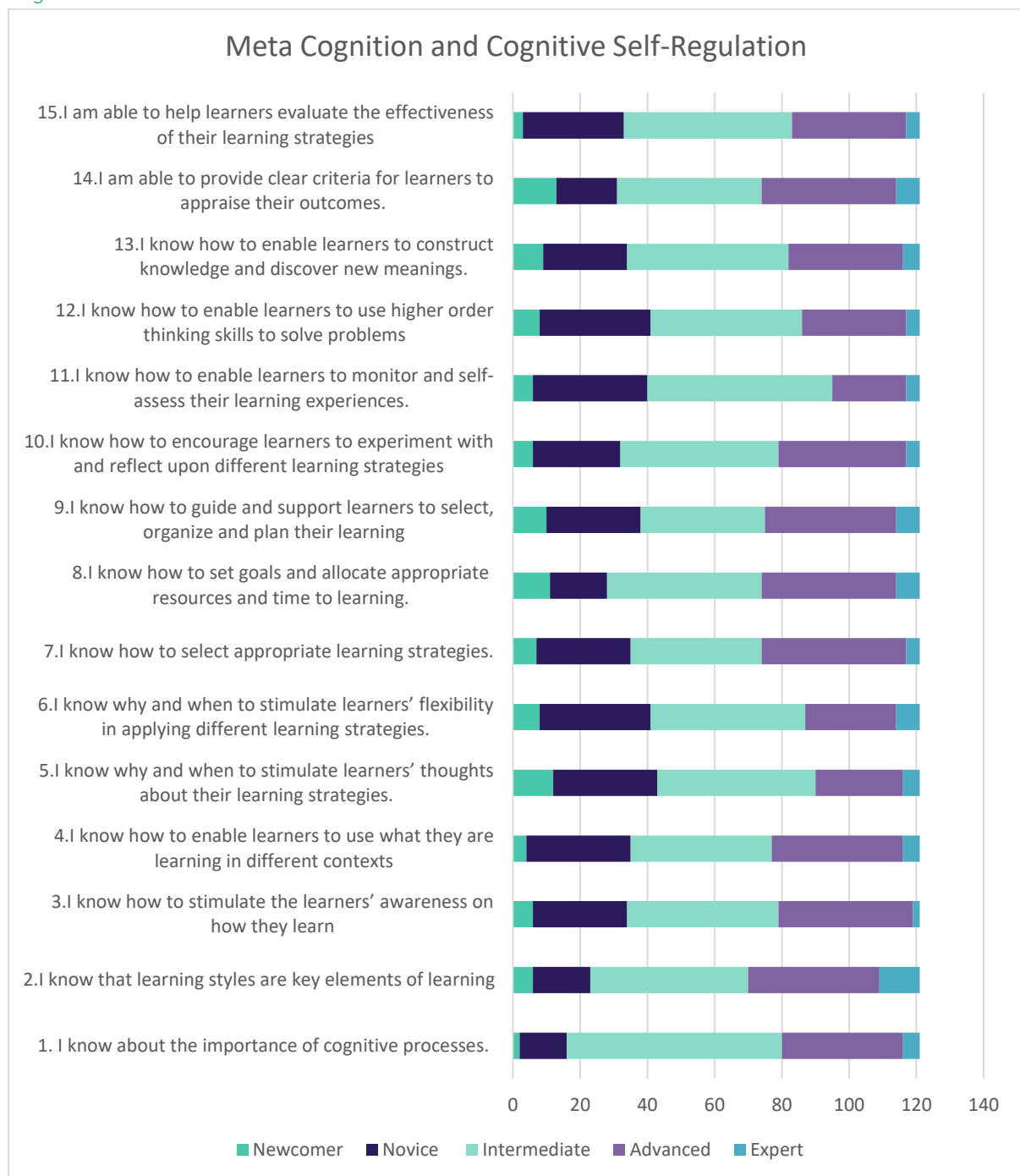
In terms of Meta Cognition and Cognitive Self-Regulation (Figure 4.7.1) the respondents felt the most confident in terms of knowing about the importance of cognitive processes. They felt less confident regarding:

- a) Knowing how to enable learners to use what they are learning in different contexts
- b) Knowing why and when to stimulate learners’ thoughts about their learning strategies

- c) Knowing how to enable learners to monitor and self-assess their learning experiences
- d) Knowing how to enable learners to use higher order thinking skills to solve problems
- e) Knowing how to enable learners to construct knowledge and discover new meanings
- f) Helping learners evaluate the effectiveness of their learning strategies

Overall, in this area of competence, only 30% of respondents rated themselves as being 'advanced' or 'experts'. By contrast, almost a similar per cent (25%) rated themselves as being a newcomer or a novice in this field. The area of Meta Cognition and Cognitive Self-Regulation was the lowest scoring area of the four competency groups and indicates that this is an area where greater resources and teacher development may be needed. This is particularly the case, given that more than half (58%) of the teachers recognised the importance of this domain.

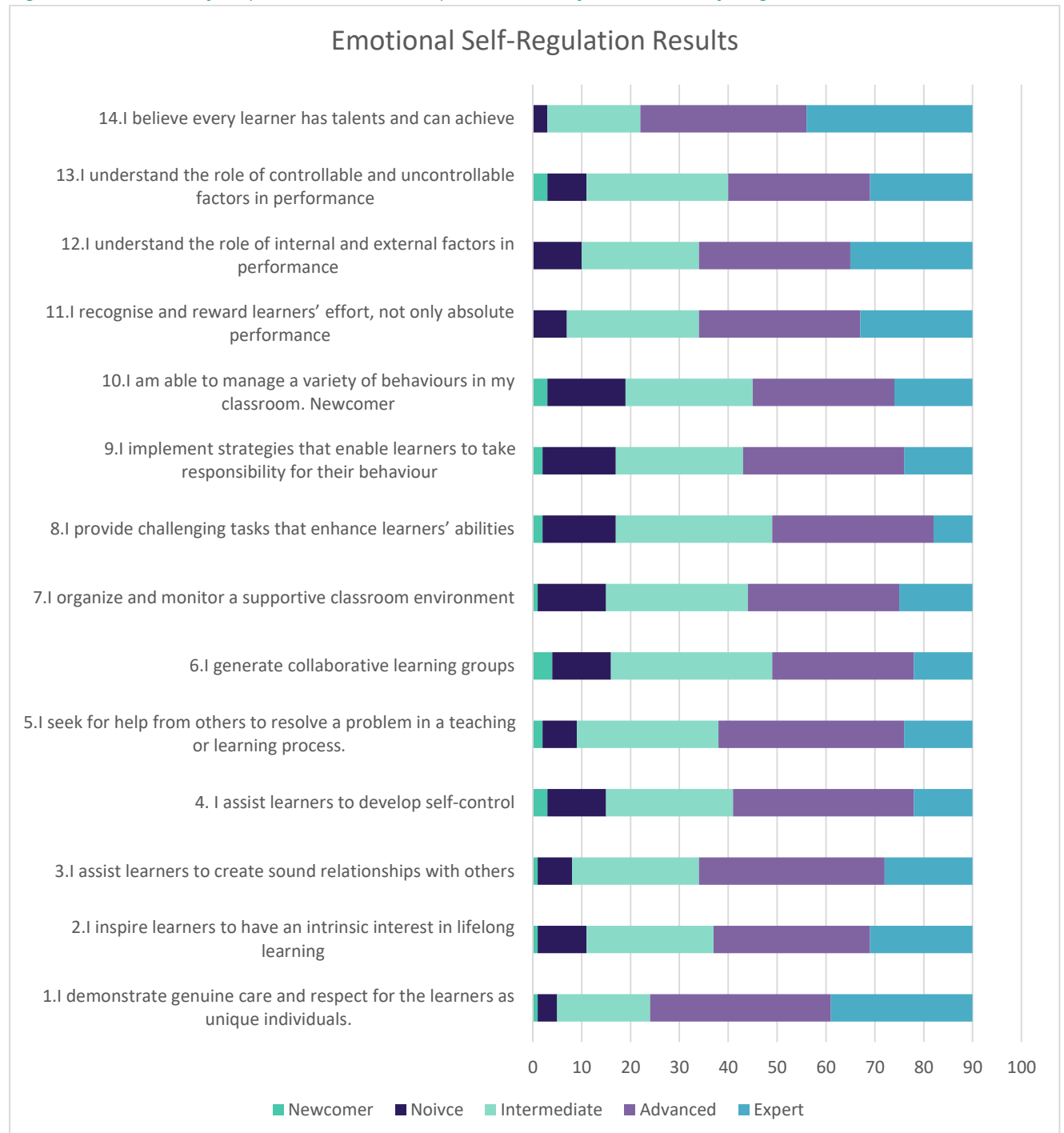
Figure 4.7.1 Results of respondents in the competence area of Meta Cognition and Cognitive Self-Regulation



N=120

Under the competency area of Emotional Self-Regulation (Figure 4.7.2) the respondents felt the most confident in terms of demonstrating genuine care and respect for the learners as unique individuals and in believing every learner has the talent to achieve. They felt less confident in generating collaborative learning groups and providing challenging tasks that enhance learners' abilities. Overall, in this area of competence 69% of respondents rated themselves as being 'advanced' or 'experts'.

Figure 4.7.2 Results of respondents in the competence area of Emotional Self-Regulation



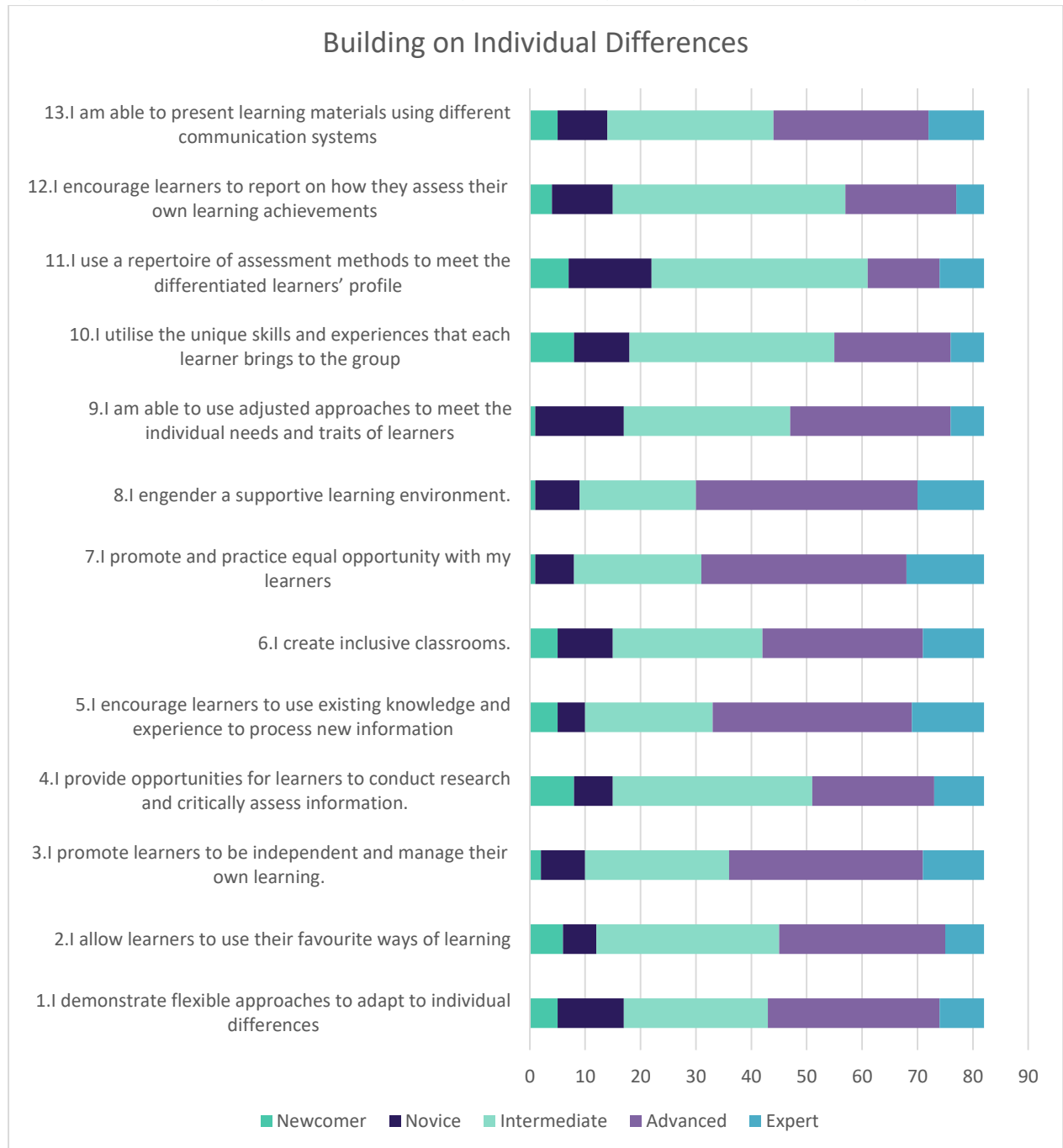
N=90

In relation to the competency area of Building on Individual Differences (Figure 4.7.3) the respondents felt the most confident in terms of:

- Promoting and practicing equal opportunity with learners
- Engendering a supportive learning environment
- Using adjusted approaches to meet the individual needs and traits of learners

They felt less confident in using a repertoire of assessment methods to meet the differentiated learners' profile and in encouraging learners to report on how they assess their own learning achievements. Overall, 46% of respondents felt they were experts or advanced.

Figure 4.7.3 Results of respondents in the competence area of Building on Individual Differences



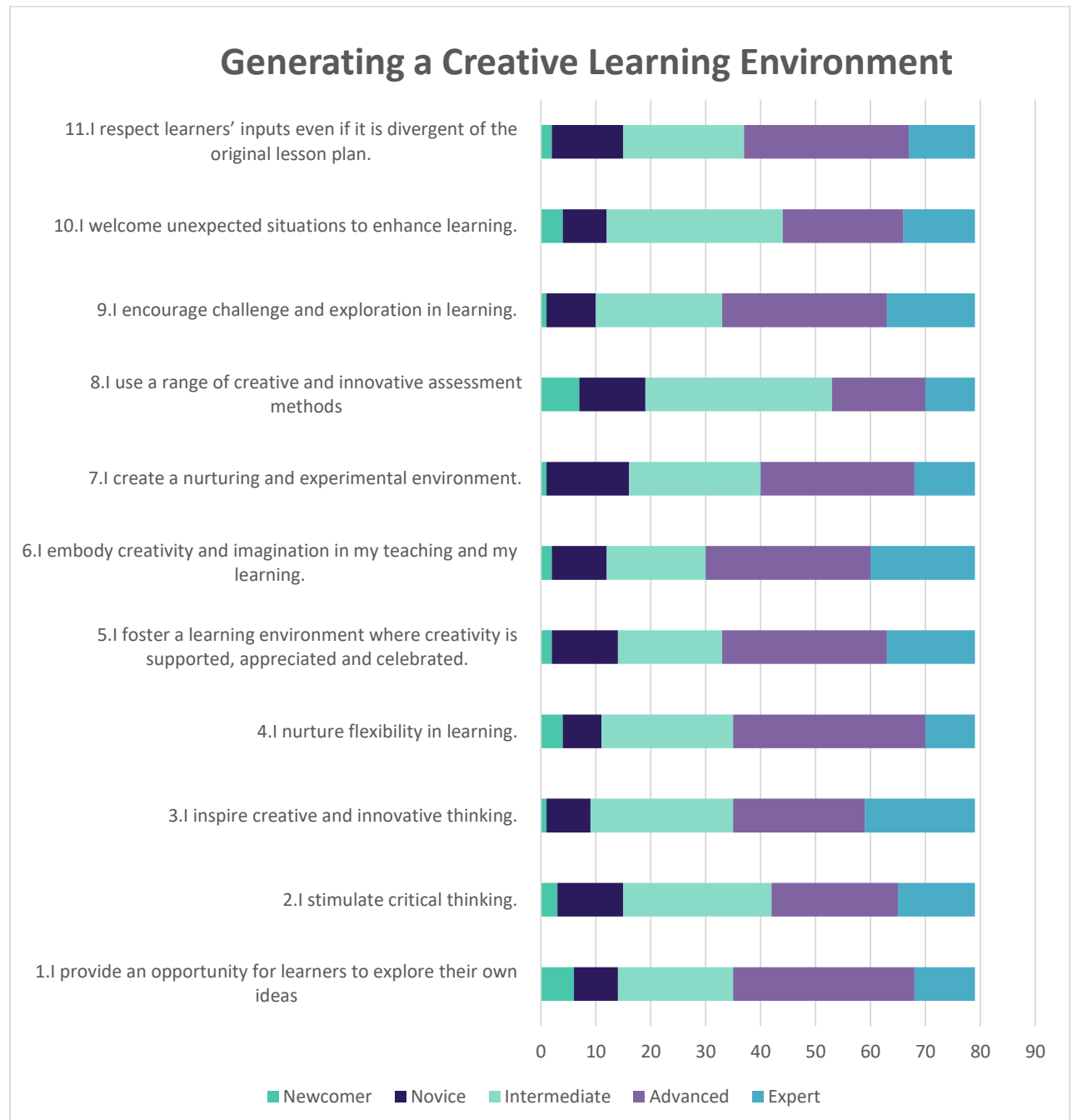
N=82

Under the competency area of Generating a Creative Learning Environment (Figure 4.7.4) the respondents felt the most confident in terms of:

- Inspiring creative and innovative thinking
- Creating a nurturing and experimental environment
- Encouraging challenge and exploration in learning.

They felt less confident in using a range of creative and innovative assessment methods. Overall 52% of the respondents considered themselves to be advanced or expert in terms of Generating a Creative Learning Environment.

Figure 4.7.4 Results of respondents in the competence area of Generating a Creative Learning Environment



N=79

5. Impact of the TiLL tool on teachers and lifelong learning

5.1 Accreditation

In the development of the TiLL tool, the Erasmus + partners discussed at length the advantages and disadvantages of making it an accredited tool either as well as, or instead of, only a self-assessment tool. The overwhelming view of the teachers completing the tool is that they would like to have it linked to some form of accreditation. The following comments capture the general responses around accreditation.

“It is essential that all if not most staff training is accredited and that acknowledges staff additional time spent.”

“People on all professional jobs are awarded the above only in teaching do people remain on the same scale and make no progress. I think there should be an incentive for whatever we do for job satisfaction.”

“Most teachers perceived that it was important to create a kind of certification on European level. However, this would not be so easy to generate a general one for all member countries. Several teachers would want to have more international exchanges but are worrying about the current lack of teachers. Self-assessment is perceived as not sufficient for real valuable certification.”

“Accreditation is very important for career development and progress.”

“Accreditation is very important, as that would allow me to develop towards SLT [leadership] positions.”

“I think it is quite science-based and another skill required of a teacher that would have to be reflected in a pay-rise which is not always possible. There could also be a hierarchy around those have it and those who do not.”

“International recognition of teaching would be a plus.”

“Pay increase is linked to performance management, so if the TiLL was evidence for performance management, that would be a real incentive to do it and would take some of the pressure of the performance management away.”

“It is important for teachers to be recognised for their learning – and it would be key to consider how accreditation and qualification can enhance career prospects or salary (i.e. do you move up a point on the MPS if you achieve accreditation?).”

The participants stated they thought that accreditation was needed, or, at the least, desirable. They were equally divided with respect to the level of recognition (national or international) but generally did not consider it to be as useful just at a local level. This indicates that the TiLL tool may have a place as an accredited ‘qualification’ only if that qualification was recognised nationally and internationally. For example, it could become a European standard for teachers. Moreover, participants felt that not only was transnational or international geographic reach important, but also the reach across systems. For example, the accreditation would need to be recognised by both public and private schools and at all levels of schooling and across different school types and systems. Many systems have their own mechanism for teacher accreditation, and the question was asked as to what approach could be used

to get a competency-based model to be more widely accepted? While there are quite common competencies across countries, several countries use internal 'requirements' to 'control' who can get into teaching and be promoted, and these pose implicit and explicit barriers to mobility. Unless there was agreement across countries to accept a new qualification, it might be difficult to motivate teacher to complete TiLL.

The strongest support for accreditation came from the Italian teachers where 95% (52 out of 55 participants) stated they thought that either a national or international accreditation was needed or at least desirable. It was felt that lifelong learning of teachers was a vital for the future and that it could overcome several problems about the mobility surrounding the teaching professional and the lack of recognition of qualifications across borders. Moreover, TiLL could lead to international accreditation and wider employability options especially in Europe.

Teachers felt that the accreditation might also boost the quality of teachers and the professional reputation and standing of the teaching profession, as these comments suggest:

"I believe that it would be desirable to establish a certification of these competences, since it is very important that teachers possess them or take action to reach a sufficient level in that area, in order to be really effective in teaching-learning processes. More generally, these skills are fundamental within the lifelong learning, but in order to be transmitted, they must be consciously owned by the teachers."

"It [the TiLL tool] is science backed research and that seems to be very much desired these days."

"If the qualification was widely accepted, then it would help people internationally, a bit like an IB. Alone it would not increase the respect for teaching among non-teaching persons as they would not know what it meant and it would mean little to them."

"It could lead to international accreditation and employability options especially in Europe."

It was felt that if the TiLL tool was to become accredited, the self-assessment aspects of the tool needed to be support by both evidence and through input from experts. To achieve this, the accreditation would involve partnership working with local expert partners such as universities, Teacher Education providers, regional education authorities, and/or external experts. It was felt these experts would also need training in how to accredit the tool fairly and accurately, as these comments suggest:

[Accreditation] "is very important, however it is difficult (perhaps even impossible) to self-assess the metacognitive abilities, without adequate preliminary training."

[Accreditation] "should happen, but jointly with appropriate courses lead by experts."

Several participants were not interested in accreditation if this involved a considerable amount of work or did not lead to some form of recognition. For example:

"I would be interested in accreditation but only if there is not a lot of additional work... workload is an issue."

"I don't know how useful it would be or how much time people would have for it."

"It [accreditation] should lead to a qualification and more money."

The French teachers also felt that in their system, accreditation would not be useful unless it was part of initial accreditation.

"On the idea to make a chargeable certificate, [this would not be] useful if [the teachers] were already recruited and if there is no European recruitment framework."

"Integrate the project outputs in initial training of teachers."

Teachers in England were concerned if accreditation became compulsory:

"The Government or DfE [Department for Education] might make it compulsory for all teachers as part of CPD and this would be very unfair."

"If it is put forward as another thing for teachers to do, there would be a backlash unless there was a clear benefit, e.g. financial or to help Performance Management targets."

The teachers were also concerned that it might add to their workload:

"Increased workload and expectations on already overworked staff."

By contrast, several school leaders who completed the tool saw that it could be a useful device for starting conversations about performance for teachers.

"The questions can be interesting for an inspector or a head of an institution that needs to evaluate teachers."

"I think it is really useful and good for school leadership to start performance conversations. It shows the difference between the perceptions of the teacher's self-assessment and perhaps the perceptions that leadership might have of that teacher. It forms a very useful starting point for that conversation."

"I think it could be really useful to use as part of a 360-degree type of exercise. We have done the '20 Questions' exercise in our schools and that is really useful when you compare how you assess yourself, how peers assess you and how management or stakeholders see you. Something like that could be very useful with this tool."

"A portfolio approach would be ideal to fit with busy teachers' lives. Some online assessment would be effective, and perhaps a viva could help to ensure the award is achieved. Assessed by a professional body (such as the Chartered College of Teaching)."

A senior leader in education felt that the TiLL system could be effective in monitoring education and a wider system level if it was accredited.

“[TiLL could be used as a] feedback mechanism... as a way of quality assurance and governance. These are legitimized by the concept.”

The participants also made suggestions about how the accreditation process might occur. Some of the common suggestions included:

- Through practical demonstration of skills
- Through the measurement of the impact on learner progress
- Peer interview
- Expert interview
- Portfolio
- Interview and assessment rather than online courses

The results of the Italian pilot showed the following preferred accreditation methods (Figure 5.1a and 5.1b)

Figure 5.1a Preferred accreditation methods (group one)

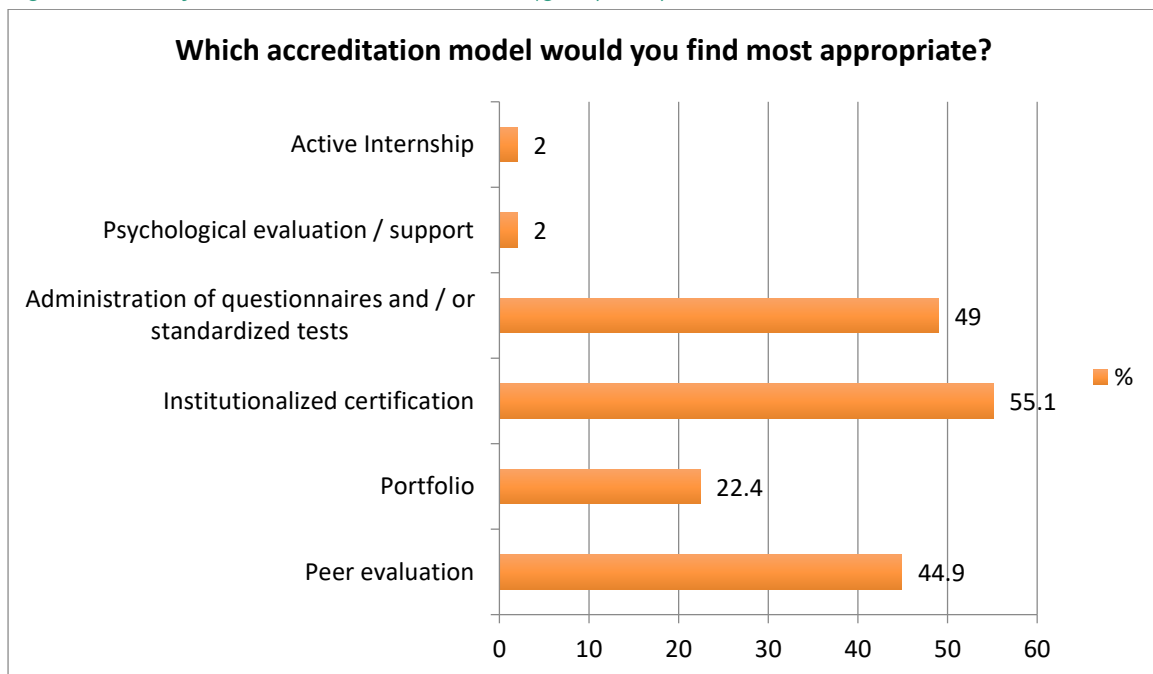
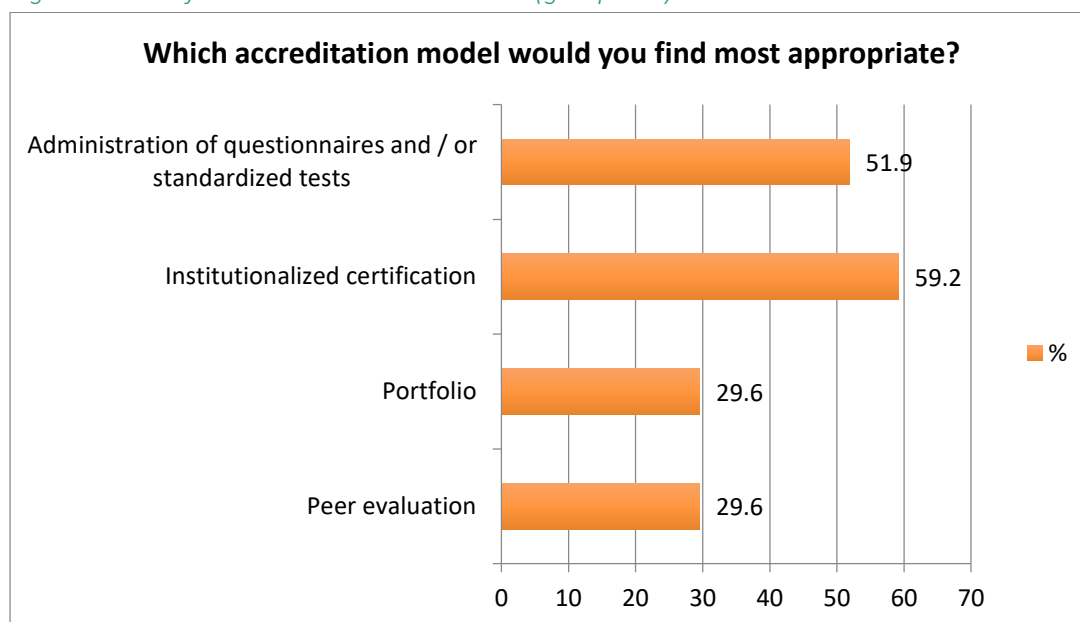


Figure 5.1a Preferred accreditation methods (group two)



It was acknowledged that an accreditation system would require higher levels of resourcing, as to do it properly it would involve at least observation, recording, discussions, and reflections which all take time and require both the teachers' and the experts' efforts to be fully resourced.

"The school should contribute, as well as the individual teacher."

"The employer should pay, and the cost should depend on the duration of the certification."

"If there was a perk beyond what is already given (e.g. pay increase), then the cost should go to the teacher. If it did not give anything additional, then the cost should go to the school if they insist on it. As for the actual cost, I cannot give a figure."

"The school should cover these costs – and it should ideally be under £200."

"If connected to the Chartered College of Teaching it would have a seal of quality – employers and the public would feel confident in the quality of the teaching by those who have been accredited."

Participants were also asked to comment on the cost of any potential 'accreditation' process and most participants identified a cost of between €1,000 and €5,000 euro as being an acceptable cost. They were also asked who should pay. The majority felt it should either be fully or partially paid for by the employers. There was also a view that national governments should pay this cost to encourage the development of teachers, as this comment from Belgium suggests, "Teachers would not be willing to pay for the accreditation. Their opinion is that the government has to pay." One participant commented that the tool would need to be improved before people would pay for it, "Maybe in a nearby future but then the tool needs to be improved."

5.2 Motivation

The issue of motivation to complete the tool was important. All the partners under-estimated how difficult it would be to get teachers to attend sessions to complete the tool. The challenge seemed to

be both the timing in the year (the first term of the new academic year) and the challenges about getting relief or supply teaching cover in the schools. This challenge in some ways underlined the issues around both teacher shortage and the challenges of effective professional development opportunities for in-service teachers. In all cases, the partner countries in the research opted for a hybrid approach to reach teachers which included, some group and face-to-face sessions (multiplier events), some small group focus groups, some individuals or pairs and the provision to complete the tools and surveys independently through virtual means. Although the teachers who completed the survey generally found it to be very useful and worthwhile, given the challenges of getting completions, the questions around what would motivate teachers to do the tool emerged as a significant focus for the research. This is evident in these comments:

“There needs to be a really explicit reason for doing the survey. This should both be about self-improvement and improved recognition.”

“Time is an important point. How do we make this simple and quick for teachers and not another administrative burden?”

“The tools are not very inviting to use for an individual teacher. I miss practical tools or training modules. Something an individual can take on and start working with by himself.”

The question was also raised that the self-assessment only model might not provide enough motivation for teachers to complete the TiLL tool.

“If you already know you are, for instance, a novice or an expert why would you bother to fill it in?”

“I cannot find the reason why I should, for example as a teacher, launch the self-assessment process.”

The TiLL tool has the challenge of needing to create a sense of ownership and responsibility at all levels. It was felt that the importance of motivation to complete the tool must be addressed from the initial steps and maintained throughout the process. Other respondents felt that there needed to be more explicit motivation or incentives for teachers to complete the tool, as the following comments suggest:

“We need to streamline and communicate the purposes for teachers doing the assessment. Why would they do it? How does it help them? Are teachers more motivated by explicit or implicit incentives?”

“Need to link the competency framework to pre-service and post-service competencies.... Need to have wide agreement across systems that these are the key competencies.”

There are many aspects of assessment which concern teachers and it is important that the competency framework does not seem to be ‘yet another’ negative form of assessment. Some of the aspects which particularly concerned teachers included:

- Time it takes to complete
- The timing (both in the year and/or in one’s career)

- When you might be *required* to do the assessment
- Context (including the age of pupil taught, challenges at a local level, subject etc)
- Teachers' knowledge (if you do not have knowledge of the practices underlying the competencies, you would find it hard to engage in self- and peer-assessment)
- It is too summative (how could it be used less to measure the teacher and more to grow a teacher?)
- Government regulation (the competency framework must be part of the government's regulations for teachers not in addition to these regulations)
- Costs (the process of assessment should be free or very low cost to the teacher although schools or systems could pick up the true costs – but would they invest in this if funds are limited? Could there be the problem of the more affluent systems being able to do it, but the neediest systems not be able to do it?)

In most countries schools have a great deal of autonomy, especially in the primary school, and so the question was raised that even if there was some form of 'required' process to make teachers complete the tool, the schools could still choose not to do it and most systems have few sanctions or incentives which could be applied. It was therefore suggested that considerable efforts would need to be made to motivate schools and teachers to become committed to the tool and see its value in terms of their personal lifelong learning journeys. Suggestions were made that the most effective form of motivation might be to mobilise teachers themselves to promote the tool. For example, the following interesting suggestion was made, "Could we have some teachers as global TiLL ambassadors?"

The interviewed teachers in general think lifelong learning and fusion skills are important areas to improve but that more work must be done to adjust the test to be even more logical. For example,

"We also need to motivate individual teachers to take this self-assessment test since there are few others which identify this specific ability. With these modifications TiLL could be a tool that would inspire teachers and teacher students to lifelong learning."

"International organisation should lead the TiLL test. This would make clear to the wider public that the profession is evidence based and progressive in its approach."

5.3 Collaboration

The teachers completing the TiLL tool greatly appreciated the way in which the tool acted as a catalyst for good professional discussions. It was strongly recommended that the self-assessment process would be best completed as part of a group situation, as the following comments stress:

"The real value of the process is that it stimulates discussions – we talked about our areas of strength and our weaknesses... learning from our mistakes/ challenges and simply sharing experiences... we can identify new strong points"

"I think this is very useful if it can be done in a group context and so the results can be discussed. I think people have different interpretations."

"Discussion in pairs is really helpful"

"I think a school-based inset on this work would be really helpful"

“The tool is really valuable to foster competencies in the school context”

“Make the session within a school, during a period more appropriate.”

These comments underlined the importance of embedding critical thinking and reflection in the learning processes surrounding the TiLL competency framework. Systems need to be in place to provide feedback following completing the tool. It was suggested that the TiLL tool could form a valuable part of professional learning communities, to be included as part of a professional portfolio, to stimulate meta-reflective writing, to generate collaborative problem solving, discussions and so forth. Moreover, it was suggested that teachers could act as the facilitators of such assessment sessions.

5.4 Development journey

Building the capacity teachers is critical if they are to have the skills to enhance and sustain school and system-wide improvements. Currently there are three main approaches used for CPDL aimed at skills building included: (i) pre-service training; (ii) in-service training; and (iii) peer-led learning.

“Lifelong learning can be gotten by attending courses, reading extensively and being mentored by given professionals, I am gaining lifelong in these ways.”

To date, the emphasis of CPDL has been mainly on instructionally focused development, not on the talent development of the workforce itself. By contrast, for example, it is argued that the principal reason for Finland’s sustained educational success, has been a focus, not only on pedagogical training but on the development of high-quality teaching professionals themselves. Systematically improving the quality of the teaching profession is undoubtedly a factor that drives school improvement.

One of the main findings of the pilot phase was that teachers felt that the TiLL tool could be used at different times in one’s teaching careers and could also be ‘revisited’ at different points as part of the development journey. This view is well summarised in the following comment:

“How often would you complete the survey as I can see it being very useful looking at your progress and development year on year.”

The teachers were interested in the TiLL tool and could see that you could complete it in different ways at different stages of your career. Particularly more experienced teachers, who perhaps held multiple roles in a school (teacher, leader, manager and so on) felt that even in answering the tool, they could see their own development. Teachers noted that the way they answered the tool with ‘different hats on’, in terms of their responsibilities in the school, changed the results they got. For example, a group of more experienced teachers, including school leaders, made comments about needing to change their answers if they were thinking of themselves as beginning teachers and then more experienced teachers or as teachers and then as school leaders. Interestingly, they tended to become more critical in their self-assessments as they were more experienced, indicating that perhaps as teachers become more experienced, their understanding of the complexity underlying the competencies has also developed and so they become more nuanced (and critical) in the judgments they make. Any system of accreditation would need to take this into consideration as it may appear on the surface that a teacher ‘got worse’ over time, whereas, the reality would be that they had actually deepened their understandings and become more self-aware. The impact of the development journey is evident in the following comments:

"Perhaps you need to revisit it with different lens so for example, as a newly qualified teacher you might get confidence and feel you are getting more expert, but then if you ask a school leader who really is analytical they might identify that they have more areas of development because the bar has risen in terms of what they expect of themselves and the school."

"As I was completing it, I was thinking with different hats on and this makes it quite hard to make judgements. I am a teacher, but also part of the senior leadership team. I found myself saying, 'Well as a teacher I think I am expert in this of that area, but when I think as a leader, I think I am a novice and could do more to develop that aspect in my leadership.' It is different for leader and for being in the classroom."

"I find that it is different [to answer] in terms of areas of responsibility."

Other teachers spoke about the importance that the TiLL tool could play in professional development and in building the competency and confidence of a teacher. In this regard, the self-assessment aspect was crucial as the view was expressed that being online and assessed by the individual, the teacher could keep revisiting the completion of the tool in a 'non-judgemental' manner. At the same time, once they felt ready, teachers could progress from the use of the tool for self-assessment and self-development to using TiLL in the more externally verified, accredited manner. This is apparent in these quotes from participants:

"I would be keen to do it year on year and see how I improve. I always think I can do better"

"This tool should be administered often, to encourage self-reflection. Sometimes we try to work in this direction [a metacognitive one] but we are not sure whether those objectives are actually achieved."

"Personally, I would not feel like giving myself an 'advanced' in a questionnaire that can be the same one that a teacher fills out with, for example, many more years teaching and training courses behind them."

The school leaders and managers who participated in the pilot could also see the potential of the tool as a way of beginning or reinforcing the conversations around teacher performance and development

"I think this is very applicable for teachers working at all levels. I work with learners up to the age of 25 and adult learners and I can certainly see this as relevant to my work."

"I can see that the tools that can be used both in a formative and summative manner as part of the development journey of a teacher"

"I believe that this tool is very useful and leads the teacher to constructive reflection, aimed not only at self-evaluation, but also at actually improving."

The partners in the research noted that the responses during the pilot sessions suggested that the tool, in and of itself, has great potential to identify competences that the person taking the test can develop. One of the research team commented:

“The students said that the self-assessment tool could be a good way for a teacher student to actually understand required abilities for the teaching profession. They suggested the tool to be introduced year two (out of five) and then return their last year and then repeat it continually.”

While the general view was that the TiLL tool was suitable to teachers at all levels of their careers and also in different school contexts, a smaller number of participating teachers indicated that perhaps the tool itself, or at least the examples used in the tool needed to be modified to more accurately reflect the realities as a teacher in different school levels. For example,

“I think the tools needs to be modified. There is a tension between primary and secondary level teachers”

“My suggestion is to differentiate the questions on the basis of the age-range”

5.6 Teacher satisfaction

The results from the initial research study showed that in many countries there was a problem with both the recruitment of teachers and their wish to remain in the teaching profession (retention). A 2019 report⁶ in England from the Office for Standards in Education (Ofsted) presented a concerning picture of the lack of wellbeing and satisfaction within the teaching. The report noted:

“Our results show that teachers in both schools and further education and skills providers love their profession... However, these positive elements of wellbeing at work are counterbalanced with negative elements that lead to poor occupational wellbeing for many teachers.” (P.5)

The report concluded that the biggest driver of job satisfaction in the education system was the teachers' mental health and wellbeing. While not an initial aim of the TiLL project, the results of the pilot showed that the use of the TiLL tool, especially in a group situation and as a basis for self-reflection appeared to produce a very positive impact on teachers' perceptions of their own wellbeing. While the sample size might be too small to draw substantial causal conclusions about the potential impact of TiLL of teacher wellbeing and retention, there was some evidence of it having a positive and transformational impact. This is apparent in the following comments:

“It was remarkable to see some of the teachers' positive reactions after taking the test. They became aware of their strong abilities, hence what they actually already can or know. Comments like ‘Hmm...so I am actually not that bad then...’ followed by positive reactions on their own teaching methods. This tool could be important for the pride that could stimulate their lifelong learning.”

“When I completed the test [TiLL tool] it gave me a sense of efficacy. I thought what I am doing in teaching is meaningful...I have a purpose.”

“It was good doing the tool in a group. We never get time to be with other teachers and talk about our profession. This was really good. We began talking about

⁶ Office for Standards in Education (Ofsted) "Ofsted report on teacher wellbeing (July 2019) Document reference number 190034

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/819314/Teacher_well-being_report_110719F.pdf

successful strategies... what worked for this or that. That was really helpful, maybe the tool could work more proactively to get teacher to talk and share resources."

There was also some evidence that having an accredited qualification would boost the teachers' sense of professionalism and boost job satisfaction. For example,

"The self-assessment puts the ownership of professional practice and development in the hands of me as a teacher, rather than being assigned to an outsider telling me what I need to do."

"The TiLL tool gives me a sense of coherence ... and there is a real lack of coherence in education policy."

"People on all professional jobs are awarded the above only in teaching do people remain on the same scale and make no progress. I think there should be an incentive for whatever we do for job satisfaction."

"Self-assessment is important. This [TiLL] should not be imposed. If completed as part of a supportive conversation, it improves the teacher's agency and co-agency through the community of shared learning and discussion."

"Anything that supports the professionalism of teachers is important. Doing the tool shows a teacher that she has knowledge, skills, capacities...I matter, I am valid, I am seen."

While the general view was that the TiLL tools served to boost teacher wellbeing, some respondents expressed concern that the tool did little to proactively develop the skills it 'tested' nor did it assist a teacher in dealing with the day-to-day realities of a life as a teacher. These views are summarised in the following comments:

"How could TiLL support the social and emotional wellbeing of teachers?"

"How does doing TiLL help me deal with the day to day realities of teaching? I work very hard. There is a very high workload and a lack of a work/life balance. Doing more certifications and assessment might only make things worse. And what if you do not do very well at the assessment? I doubt there will be any resources to improve. Schools are already stretched. There is a lack of resources. Where is the support going to come from to develop? As a beginning teacher working in a difficult situation, I already have a lack of support."

"Teachers already felt a sense of "disempowerment". If you scored badly at the test [TiLL], could it just make you feel worse? Who is going to start checking if you have done the test and who sees the results? This might just add to my administrative workload"

It was further commented that teachers sometimes "Feel that the profession does not receive the respect it deserves."

5.7 Lifelong learning

Citizens have a right to lifelong learning, and this has never been more important than it is today with the rapid changes work and technology. Lifelong learning is the core of successful teaching and

learning. A teacher must be willing to study and improve the knowledge they disseminate to others. Arguably, a teacher who is not a lifelong learner should not teach as their lack of knowledge could impede learner's progress. Moreover, they need to model lifelong learning for their students and as is indicated in the title of the TiLL project be equipped to *inspire* lifelong learning in their own profession and lives and in the learning of their students. The teachers participating in the pilot studies expressed the importance of lifelong learning in the teaching profession. As one respondent put it, lifelong learning is, "Very important - we learn all the time". When asked about lifelong learning, the participants in the focus groups suggested that continuing to learn as a professional motivated and enhanced your interest and engagement in teaching. As stated in the previous section, continuing to learn and develop also helped to boost collaboration, enhance a sense of professionalism and eliminate tension and boost wellbeing. This is shown in these responses:

"Lifelong learning is perceived as very important for the teachers. It keeps an open vision and you build features for the future."

"[Lifelong learning] is very important, to change and evolve teaching practice according to new research."

"[Lifelong learning] is very important as we should never stop aiming to train and develop our craft."

"Lifelong learning] is very important. Subjects continue to change so keeping on top of our subject scholarship is essential. Pedagogy also develops as we embrace the potential of evidence-rich practice and by learning from other professions."

"Lifelong learning is the core of teaching and learning. A teacher has to be willing to study and improve the knowledge they disseminate to others. A teacher who cannot do this should not teach as their lack of knowledge could impede a learner's progress."

At the broader system level, some teachers pointed to the need for education itself to change for the future. As one respondent suggested, "Education is going through a medium to long-term revolution, and so the system needs long-term investment in the lifelong learning of teachers". Similarly, at the practical level there were rapid changes (perhaps even too many changes) in schools that meant that teachers needed to be lifelong learners to keep pace with these changes. For example, changes in curriculum, changes in subject knowledge, changes in technology and changes in teaching pedagogy and assessment.

Criticisms were levelled at the lack of focus on lifelong learning in initial teacher education. The main view was that teacher education prepares you for the first few years of teaching but does little in terms of contribution to workforce training and development in the longer term. There appeared to be the general view that workforce development in teacher education was not well resourced and was often driven by external demands rather than supporting the lifelong learning or development of the individual teacher. This is shown in the following comments:

"The only CPD we have done relates to government policy not my own needs. So we have had phonics training, assessment for learning training, even mental health first aid training but it is all focused on what someone else wants to see happen in the classroom, not on my lifelong needs as a teacher or as a person."

"I get some support for my lifelong learning at my school but not really much. It is more my own professional responsibility."

From the data from the surveys and focus groups, comments were not made about the role of teachers to inspire a desire for lifelong learning amongst the pupils. There were some tangential comments, such as, when the participants were completing the survey questions like, "Do you want me to answer this about my teaching or what I do for the children?", but these were more practical questions rather than directly addressing inspiring lifelong learning. The next section outlines some of the potential impacts of TiLL as identified by the participants and in section 5.8.1 there are some links made to the likely benefits for the pupils, even if these fall below what may be described as 'inspirational'.

5.8 Impact

The impact of the TiLL tool was seen to be overwhelmingly positive. For example, 100% of participants described the tool as "very helpful". Participants described the process of completing the self-assessment as being "stimulating" and "interesting". The following comments indicate the general positive nature of the impact of being engaged in the pilot:

"The tool is really useful for teams of teachers working together"

"The TiLL tool provides strategies for professional development"

"TiLL will help to make better skilled teachers"

The evaluation shows that teachers think it is very important for teachers to know what specific areas could be improved, and as one respondent suggested, "TiLL absolutely helps with that."

Apart from the design and language improvements outlined in Section 4 of this report, participants felt that the impact would be improved if the self-assessment elements could be completed as part of a group as some of the teachers commented that self-evaluation is always hard because people tend to underestimate or overestimate their own abilities. Furthermore a 'group' situation allows for a professional discussion around the competencies and this might be as valuable as completing the task itself. Moreover, some participants saw an even greater impact of the tool if this was part of a wider global programme. For example, it was suggested that TiLL could become a 'hub' for cultural and professional exchange amongst teachers and to build a stronger community of research and inquiry around the lifelong learning of teachers and the development of the workforce. In a very innovative suggestion from one participant it was mooted that the impact of TiLL could be even greater if aligned to professional development programmes across industries (rather than being specific to education). It was felt that the impact of TiLL would increase if it was, "More practical, agile and connected to [other] industries"

The following sections outline in more detail the benefits of TiLL to different stakeholders, namely, the pupils, the teacher, the school and the broader education system.

5.8.1 Benefits to children

As stated previously, the respondents did not link their own lifelong learning as teachers to how this might inspire the lifelong learning of their pupils. Greater attention would need to be paid to this aspect in the larger scale adoption of TiLL. The respondents did, however, look to try and make very

direct and practical connections between TiLL and the day to day realities of their classrooms. For example,

“What could be the alignment between the competencies and decisions, practices and actions in terms of pupils’ learning, curriculum, pedagogy and/or assessment?”

“How is TiLL integrated with subjects and general teaching and learning processes?”

“The tool [needs to] explicitly {link} with the day to day of the school experience.”

During the focus groups, it was sometimes challenging for the participants to know if they were answering the question about themselves or about their working as a teacher, as the following quote summarises:

“At times there is a difference between whether the question is asking a question about your learning and behaviour as a teacher or whether it is something that has been asked about the child i.e. how that characteristic is being developed in a child. It might be best to separate the survey into two components – answer these questions about yourself as a professional and then another section asking you to answer them in terms of the way you develop things in the classroom or with the pupils.”

Some of the interviewed teachers said “Ok, I know how, but the classroom context makes it impossible to carry out...” and they were unsure where or if that connected to one of the other questions in the self-assessment test. The logic of how these sets of questions interacted was not always obvious to the teachers in terms of their classroom practice and making that connection more obvious might assist the teacher to better analyse their own situation. It is important for the teacher to understand what is possible, in terms of the child’s learning and learning behaviour, to change or influence and what is not. As one respondent noted, “I know how to... but the circumstances make it hard to implement it”.

For some teachers, the TiLL tool served to provide insight into the theoretical principles behind lifelong learning. Arguably, this understanding can then be more directly related to classroom environments, including changing the whole school culture. The responses from the teachers indicate that the relationship between a teacher’s own lifelong learning and the manner this is developed in the pupils may be strongly linked. In this way the TiLL tool may stimulate teacher-pupil around lifelong learning and, through modelling and changed pedagogy, boost the pupils’ propensity to become lifelong learners for themselves.

The value of this co-learning cannot be underestimated. By providing the concepts and language to the teachers this enables the discussion of these and the issues and influences relating to the pupils’ lifelong learning. The assumption that changing the teacher to become a lifelong learner will result in the pupils becoming inspired lifelong learners is rooted in the concept of mastery learning, informed by international comparisons evident in the pilot project.

Moreover, the design of the tool, especially when completed both as self-assessment and in a collaborative context, promotes critical engagement and reflection. Once the tool is more widely used,

the resulting evidence-base should further inform approaches to professional empowerment and provide advice about how to implement and evaluate different models of lifelong learning for pupils in the classroom. Criticality, TiLL places the professional development of the teachers as being crucial for the development of lifelong learning in the pupils. The two are both sides of the same coin in terms of how they operate. Concurrently, there is a strong relationship between theory, practice formation in the teacher and the vitally important impact on pupils.

To supplement the completion of the tool, and at the request of the teachers in the focus groups, the website also provides links and signposts to further reading would support any teacher to take their thinking around lifelong learning further. Ideally, in the future, it would also be possible to establish a virtual community of practice who could share age-appropriate classroom ideas, resources, tips and techniques and co-produce lifelong learning projects. In conclusion, the benefits to children and directly related to and dependent on the benefits to teachers.

5.8.2 Benefits to the individual teacher

TiLL can enhance teachers' access to personalised professional learning (PCPDL), create a more flexible learning experience for teachers to develop their lifelong learning attributes, and increase educators' capacities to facilitate effective lifelong learning experiences for their pupils through more targeted tasks and providing insightful information on learners' needs, by better understanding their own development. This was seen to boost professionalism, enhance flexibility and employability across various education systems and to boost a person's personal fulfilment as a teacher.

Some questions asked for knowledge that the participants had, but some of the interviewed teachers were frustrated as they cannot act upon their knowledge due to lack of resources in the classroom. They wondered where the realities of school life and the lack of resources available in schools was recognized, or at least acknowledged, in the test.

It was felt that TiLL addressed a major problem around the lack of workforce development and training (as opposed to training for classroom orientated aspects) for the teaching profession. As stated very succinctly by one of the pilot teachers:

"The problem in schools is that we have to have many hats on, and we cannot always focus on our own professional development. This resource helps to give us a focus."

5.8.3 Benefits to the school

The early evidence suggests that TiLL encourages professional dialogue and a deeper interest in teachers' lifelong learning. This generation of a professional discussion is important, but if this were also to be aligned to provision of adjunct opportunities for further professional development and learning this could lead to an overall improvement in the effectiveness of individual education institutions, and whole education systems. For instance, schools using insights from TiLL could strategically enhance their provision through more targeted learning opportunities. Whole schools may become more effective by virtue of having more learned, better, less fatigued teachers, which in turn would benefit the recruitment and retention of good teachers.

5.8.4 Benefits to the system

TiLL has been identified by both the OECD and UNESCO as a possible contributor to both the Sustainable Development Goal 4 -to ensure equitable and inclusive access to education, and enable

high quality lifelong learning, and as part of the teacher development programme being developed as part of the Education 2030 Compass (E2030). While it is early days in terms of how TiLL could be incorporated into these processes or scaled-up to meet the challenges of both the Sustainable Development Goals and the E2030 project, TiLL does offer some very clear advantages.

Primarily, the way it was designed to be implemented is affordable, flexible and scalable. With greater investment in the technology surrounding the TiLL tool, there is optimism that TiLL will enable increased access to education across the globe - both for those who currently are deprived of educational opportunities, and those who would benefit from the opportunity of increased educational provision. If the efficacy of whole school systems increases, societal goals may be achieved to a greater extent.

6. Risks, recommendations and future directions

6.1 Risks

To understand the risks that TiLL poses in education, an introduction to the ethical issues surrounding the use of TiLL in general is a useful starting point. Several potential risks and considerations were helpfully identified by the participants in the pilot testing. These are categorised and exemplified in the following sub-sections.

6.1.1 Transparency

The policies and frameworks surrounding TiLL must be developed and implemented in an open and transparent cooperation with the stakeholders. If TiLL were to be more widely adopted transparency would be key. Transparency boosts a self-improving system and hence is pivotal to the learning process. The issue of transparency is very closely linked to the values which might underpin any future sustainability of the rollout of the tool. If the approach was to be highly commercial it is likely that both the tool and the data it contains would be held in a 'black box' with very limited external transparency. Conversely, if TiLL were to operate in a 'creative commons' environment, then a much more open approach to transparency and sharing is likely to operate. Whatever the final model agreed, the TiLL project team have maintained to date a position in support of the ethical and responsible use of TiLL for social and educational good.

6.1.2 Bias

TiLL systems have the propensity for biases in the outcomes. TiLL was built by humans and hence has the potential to reflect the biases of the creators. Furthermore, TiLL is ultimately based on data sets that may themselves be biased; this causes their operations to reinforce these biases. For example, questions were asked about the likely fairness in terms of gender – "I would be interested in the views of men and woman... I think men often over emphasise their self-assessments while women underestimate these."

6.1.3 Privacy

The issue of privacy is heightened using TiLL due to TiLL's ability to consume huge amounts of data and draw conclusions and relationships that would not otherwise be possible. For instance, the information gathered over time could begin to serve directly or indirectly infer certain proxies. So for example, if TiLL gathered data over time which suggested that those respondents scoring very highly in creativity made the best teachers, but those who scored highly in cognitive learning skills made the best school leaders, the test results could be wrongly applied as a proxy for 'leadership potential'.

Similarly, as information is collected about experience levels and gender and so on, it would be possible to start seeing trends which may or may not be indicative of predictability and could be incorrectly used to predict. For example, “We need to do more to support the creativity of male teachers as men are always less creative than women”. Concerns were already raised that if someone were to answer the questions very honestly and score themselves lowly, this could become a self-fulfilling prophecy with the ‘system’ or the individual having low expectations of themselves rather than seeing this as a development opportunity, in other words ‘I did not score well... I am therefore not a good teacher and never will be.’ Arguably, if TiLL competencies were linked to professional learning, TiLL could enable penetrative levels of surveillance at scale. For example, it would be possible to determine which teachers in what schools were the most active lifelong learners, when they did their learning and how well they performed at their learning. The TiLL process could reveal critical and sensitive information about an individual and how they develop. It would be possible for TiLL to track and monitor factors relating to teachers’ strengths, weaknesses and vulnerabilities - and may be able to infer even more sensitive information. In the pilot phase, already participants were rightly asking, “What happens to my data: name, email address etc.?”

6.1.4 Security

Aligned to privacy is the issue of security. Over time, TiLL will gather a lot of data both on individuals and on patterns. It is important that GDPR and the relevant national and international data protocols are observed, and that data is stored securely and not used for a purpose beyond its intended use – that is, to inspire lifelong learning. Security of data is important even if the project were not to continue as data would require secure archiving, once again in accordance with data protocols. It is likely that if TiLL became a much larger project the costs of data storage and security would also rise. Issues of security raise the questions as to, other than the teachers themselves, who if anyone, should also have access to information from the TiLL process?

6.1.5 Autonomy

Participants in the TiLL pilot were concerned over a loss of personal autonomy either through an ‘invasive’ design of the tool or through ‘aggressive’ mandated application of the tool. Over time, if TiLL were to become the standard, systems might move towards more mandatory systems of implementation. Even if it remained a matter of choice whether a teacher completed it or not, the enhanced technical version of TiLL would need to incorporate more elements of persuasive design to ensure people complete the tool. In either sense, TiLL could pose a threat to individual autonomy. While not being currently deployed in the design of TiLL, social media platforms employ methods such as infinite scrolls, aggressive summons and tailored recommendations to ‘hook’ users on these platforms. Even during the pilot period, TiLL has produced data which could be effective at predicting future outcomes based on past patterns, meaning that persuasive nudges could become highly personalised and therefore more accurate. Concerns were also raised over the need to be careful of purpose creep – that is that TiLL was designed for one purpose but gradually becomes used for a very different purpose. Moreover, participants expressed concern if this purpose became to use TiLL as, “some form of gate keeping”.

6.1.6 Obsolescence

While designed to promote greater flexibility in the system and to encourage teachers to be inspired to pursue the personal development of their own lifelong learning and fusion skills of the future, if the tool itself was not kept current and up to date, it would indicate a lack of dynamics and flexibility.

Ironically, this would encourage the opposite of its original intention and instead become itself an example of rigid and instrumental learning. Without the budget to continue to create a dynamic and flexible tool into the future, the content could become obsolete.

6.2 Continued Professional Development and Learning (CPDL)

There was consensus that the teaching profession should be globally recognised as a highly skilled profession, and that this should be reflected in teacher pay, teacher lifelong learning, and the general public perception of the profession.

One of the future plans for the TiLL tool is that teachers completing the tool would not only receive their personalised printout of their profile in terms of lifelong learning under the four competency groups, but that they could also be directed to a range of CPDL opportunities and ideas to enable them to personalise their continued lifelong learning in light of their own strengths and weaknesses or point in their learning journey. There was strong support from the participants for this aspect of the tool. Teachers liked the idea that they would have the autonomy to do the CPDL most relevant to them rather than being 'made' to do general or generic offers, as is evident in these comments:

"We need to empower teachers in the decision making [about CPDL]."

"Individuals set their own development goals for CPDL."

"[This tool can improve CPDL] by reducing external inset time and personalising CPD according to staff needs."

There was also support for a more bespoke and personalised programme of lifelong learning. This was viewed as being more effective and appropriate for teachers at all levels of experience. Concurrently, greater bespoke and targeted CPDL would lead to greater improvements in the quality of teachers.

"TiLL improves teaching and learning by reducing external inset time and personalising CPD according to staff need."

"Personalised lifelong learning will develop teacher effectiveness."

"TiLL can effectively enhance the provision of continuing professional development for experienced teachers."

"TiLL could be used to establish learning pathways and is more specifically linked to whole person development."

"It might help guide choices of future learning and assist in reflecting on our current practice."

"By sharing good practice that can be replicated or experimented with at school level and help guide the choices the school leadership take when reflecting on relevant policies."

Some suggestions were also made that the TiLL tool could open the way for more interesting and accessible pathways into professional learning and be more current in terms of the way professional development is occurring in other industries. The view was expressed that TiLL could link to explicit skill training, and online and face-to-face courses and perhaps some of the courses could be delivered by sector experts in these skills beyond the education sector.

"Some of the competencies listed I think need to be explicitly taught to teachers you don't just 'pick them up' through working. This needs to be thought about in terms of the resources you provide. Some companies have done this in interesting ways and so perhaps we could look at some of the models of organisational learning in these contexts."

"How to learn some of the skills is important. There are experts who could offer course beyond the education field and in so doing increase the permeability between education and business."

"There were some interesting pedagogical tools there, but I was unsure if there was supposed to be some follow-up guidance on how to make improvements to our teaching or just the tests themselves."

"I am unsure how to use TiLL to help my teaching. Perhaps some guidance on this would be beneficial."

"If there was training in each of the areas then it would be really useful to train those aspects. These are the main areas, particularly pedagogy."

"If the proper training was in place, then it would be great to have a qualification on lifelong teaching or a kind of teaching licence that needs to be updated every few years to encourage ongoing training."

For other participants, the self-directed nature of potential CPDL was also seen to be an attractive aspect of the TiLL tool. As the following comment suggests, once the self-assessment occurred, people can use their autonomy to develop their skills through a range of sources.

"Lifelong learning can be gotten by attending courses, reading extensively and being mentored by given professionals, I am gaining lifelong in these ways."

"By providing further info on the areas where I am weak."

"I get training sessions every week in school and I also get training in my Uni every week and these improve my lifelong learning."

"The best way of training would be online, submitting a lesson plan in an agreed format, with some indication of activities done. Some online questions that can be answered to show understanding in different areas that need to be completed etc."

"Doing the questionnaire, it seemed like there were areas which I would have liked to learn more about and practice more. There could be training videos or articles or lessons etc. to help showcase the different skills etc."

"The audience was interested, but still some of teachers are lacking a "concrete tool" to improve their practice, after having performed the different questionnaires."

One of the teachers from England could see the potential of the tool as part of a community of inquiry approach:

“I facilitate a collaborative enquiry group of teachers at my school – so we have support through time to discuss pedagogy and research eight times over the year. The TiLL tool could be part of that process.”

This was also reflected in the French situation:

“We have now some more teachers and schools in our network. They also could interact between each other and compare existing practices in the neighbouring schools.”

The teachers completing the TiLL tool were also asked to suggest useful resources related to the competencies that they either knew about or would find helpful. The following general types of resources were suggested:

- Reference documents related to the competencies
- Reference documents related to other aspects to extend the spectrum of subjects
- More resources on ethics and humane leadership in the context of education
- More details about ‘inclusion’ and how to differentiate (in the classroom, but also on a policy level)
- More resources for managing lifelong learning in the context of the full range of diversity e.g. including LGBTIQ inclusion and other topics that are still not covered in many European countries
- Reading and resources on the purpose of education
- Access to research and shared best practice
- Distribution of knowledge and training to different management levels

In the Belgian context, the teachers felt that they were given adequate alternative resources to develop themselves. For example:

“Most of the teachers replied that they get constantly offers to educate themselves on the different levels. It is often decided within the school team which additional education and training the teachers will follow. There are a wide variety of institutions who offer training.”

It was also suggested that there needed to be more general resources on the TiLL website itself where future teachers could also explore the background to the questions and propose other resources.

In terms of specific resources which could be linked to the TiLL website the following suggestions were made:

- Training courses offered by schools and schools’ officers
- Training courses by universities, research institutes and associations (e.g. for Italy, they are available on the MIUR⁷, the Italian Ministry of Education and University, website)
- Relevant articles in journals, magazines, online and in books
- Virtual universities (e.g. Unipegaso⁸) courses

⁷ <https://www.miur.gov.it/>

⁸ <https://www.unipegaso.it/website/>

- Courses provided by businesses, NGO's and other providers (e.g. Online Erikson⁹ courses on the teaching of emotions)

The following final comment on CPDL is also important, "There are a couple of ways to build lifelong learning but there is need for easy, accessible CPDL to match the areas in TiLL."

6.3 Future developments

The following questions suggest some further considerations for any future developments:

- a) What steps can educators, education leaders and other influencers take to ensure teachers at all levels of their careers get the best deal from the TiLL and the associated CPDL?
- b) What further information would teachers need to understand TiLL and get the best deal from it?
- c) How do we know if a teacher who scores highly on the competency framework is also a better teacher for the pupils? What is the link between values and skills and classroom or leadership practices? Does it change a teacher's level of aspiration for themselves and their pupils? How does it change their actions in the classroom? What is the impact on their wellbeing? Professionalism? Recruitment and retention?
- d) Would it be possible to link the competencies to types of teaching and learning methodologies for example, which, if any of the following might boost teachers' competencies and pupils' learning? E.g. active learning, teacher directed/didactic approaches, inquiry based learning, digital learning, outdoors learning, learning in locations other than schools, studio based learning, differentiated learning, individualised or personalised learning, interdisciplinary learning, project-based learning, arts-based learning, problem-based learning, etc, other?
- e) Institutions have certain configurations. How might this effect a teacher's acquisition of competencies? Could teachers develop further in certain schools as opposed to other schools? If this is the case, how might teachers in 'weaker' schools be supported to match the teachers in the more advantaged settings?
- f) How could teachers and even the pupils be more directly involved in co-production of the tool and in setting the assessment criteria?

In addition to the above questions, conversations are underway to see whether the prototype system could eventually be moved into an AI-enabled, blockchain-based system which would allow the system to be more personalised and individualised to each teacher and their context and needs. This would more accurately link CPDL activities and offers at the local level to the teachers who want or need them. It would also provide very current meta data of teachers' needs and trends in competencies in the system, so education systems are able to respond more rapidly to changes needed in education. Potentially, use of an AI enabled platform could more effectively establish local and regional 'hubs' capturing and mapping where there are strengths in certain competencies to enable more school-led systems of skills sharing and development.

6.4 Recommendations

- 1) TiLL needs to be accompanied by a clearer ethical and governance framework to enshrine the transparent principles it was developed upon.

⁹ <https://my.erikson.edu/ics/>

- 2) There could be more inclusion of the ethical dimensions of teaching as either a 'standalone' fifth competency or embedded in the questions design across the existing four competency areas.
- 3) The TiLL tool has considerable potential if every teacher had a competency profile and if policymakers, researchers and professionals in education could interpret meta data to develop greater knowledge of the local picture and for international benchmarking.
- 4) The value of the TiLL tool is that it permits teachers to have both formal and informal learning recognised. While self-assessment is valued, as are the informal discussion that occur if the tool is completed in a group situation, further development is needed around formal certification and what would motivate a teacher to undergo that accreditation process. Ideally this needs support at the national and transnational level.
- 5) The TiLL tool acknowledges the value of competencies gained in other ways to teaching and through the tool and subsequent accreditation process it may be possible to highlight these and to support the embedding of reflective practice, critical reflection and ICT competencies.
- 6) TiLL has the potential, with further enhanced design and more resources, to model best practice in terms of learning and assessment design and to counteract the fragmentation identified in the first mapping report for the project. While it is teacher-led, it has potential if further exploited to lead to school system improvement and to enhance links across schools, systems, and countries leading to a more flexible, mobile and professional community of teachers.
- 7) The design of TiLL recognises the central place of quality teachers in school improvement and embeds a quality assurance framework which shows the lifelong learning skills for teachers now and into the future. To maximise this benefit, the TiLL tool needs to be closely linked to CPDL offers, resources and workforce development for teachers.
- 8) TiLL will collect and manage a considerable amount of information about the strengths and needs of teachers. Bearing in mind the ethical consideration previously noted, this information could form a foundation for dialogue, for evidence-based education policy, for targeted CPDL, for improved research and development and for internationalisation of education. The value of the TiLL tool for these purposes needs to be more fully explored and exploited.
- 9) The TiLL tool appears to have considerable value in developing the lifelong learning of the teachers but it is less clear how this translates into what is really needed in the profession and in the classroom, and, in particular, how having teachers who are active lifelong learners may also inspire more lifelong learning amongst children and young people.

7. Conclusion

The report shows that it is very important for teachers to know in what specific areas they could improve. TiLL absolutely helps with that. The results of the pilot implementation phase suggest that the TiLL tool is effective at promoting lifelong learning in the teachers, yet, it is not clear how this translates into teachers inspiring lifelong learning in the pupils. Despite this, the evidence is that if TiLL is used for self-assessment in a group or learning community, TiLL helps to establish a culture of flexibility and lifelong learning amongst the education community. Developing autonomous individuals is a key goal of lifelong learning. TiLL places teachers in the driver's seat for their individual learning journeys, making key decisions about what, when and how they learn. In the classroom, teachers should facilitate learning and not impose it. The same should be true of their own continued professional development and lifelong learning. The pilot project has given a positive endorsement that TiLL has something to offer on all aspects of the growth and development within the education profession (e.g. recruitment, selection, improving induction and development, and the leadership journey). Moreover, it offers signposts to lead the system with a focus on critical evaluation of innovative practice and research in the education and professional development of teachers.

Appendix One: Questions to inform multiplier events

Some questions to guide your pilot sessions

Remember we need rich and comprehensive data both qualitative and quantitative so please use the following guide but feel free to also provide extended responses and responses on other topics. Read this in relation to the guide also from Freref.

Quantitative data to gather

- Number of people at each pilot session (whether or not they complete the tool) – please keep sign on sheets or similar proof of attendance and multiplier events.
- Males and females
- General description of background (i.e. student teacher, beginning teacher, mid-career teacher, experienced teacher, school leader, other specify)
- Try to use the actual online tool rather than a print off so we are also gathering the central data. If you need translations provide these alongside, rather than instead of, the online tool.
- Any other details that you think are relevant e.g. early years, primary, secondary etc

Qualitative data to gather

Some qualitative questions you may use in focus groups/as a survey or other means to get ‘deep’ and ‘rich’ reflections. The questions below can be pasted into a formal questionnaire style or used to lead focus groups. Please note carefully, I will need all the responses in a digital form and in English and so notes etc will need to be translated/transcribed etc by each partner country. There is a small administration component in your budgets for this to occur. These questions are a guide only and they are not in a particular order, they just cover some of the themes:

- How important do you think lifelong learning is for a teacher?
- What current support do you get for lifelong learning?
- How might the tool assist your lifelong learning?
- How might the tool boost the quality of teaching or school leadership?
- To what extent do you think that the four major competencies are the ‘main areas’? Are there areas missing?
- How might the tool be used by teachers over time to improve their teaching?
- How clear and accurate were the choice options (i.e. Novice etc)?
- Can you suggest resources that exist or that you are aware of that could boost some or all of the competencies listed? Please send links or other guides to help us identify those resources.
- How important to you is it that the tool could lead to an accredited and recognised qualification?
- If the tool, were to be the basis for a qualification, how should your ability be assessed? For example, self-assessed, portfolio, through peer interview, through an external meeting, through psychometric testing, assessed at the local school level, assessed by an outside organisation at a regional level, assessed by a national authority, assessed by an international authority? Other?
- How important is it to you that if the qualification was accredited that it led to some or all of the following: an award or recognition, pay increases, promotion, ability to work more flexibly, ease of working abroad/internationally (work mobility), foster transnational working?

- If it costs money to be accredited, how much should it be and who should pay to be accredited?
- If there was NOT a fee to complete the TILL qualification, how else could it be made sustainable and implemented for more teachers in more countries?
- In what ways do you feel you could improve in any of the competencies in either formal or informal education?
- In what ways could the TILL system work with current teacher development and continuing education programmes (CPD) for teachers at the national or local level? How could it counteract fragmentation?
- How might a qualification like TILL boost the quality and respect of the teaching profession?
- How could a 'train the trainer' model be used to amplify and extend the system to more teachers?
- Do you have suggestions for how we could transfer the results of this work to stakeholders and decision makers e.g. local, regional, national, European, international authorities and others?
- Do you have any suggestions for how you could recruit other teachers to complete the TILL framework now or into the future? It would be great if everyone who completed it, encouraged at least 3 other colleagues to complete it too.
- Do you have any overall reflections, suggestions, modifications you would like to make?
- Are you interested to learn more about TILL and/or teachers' competencies?
- What risks, if any, do you see of a potential wider adoption of the TILL framework?

Appendix Two: TILL Survey questions

1) I am a... (tick)

student teacher
beginning teacher
mid-career teacher
experienced teacher
school leader
other (please specify)

2) I am based in ... (tick)

early years
primary
secondary
other (please specify)

3) How important do you think lifelong learning is for a teacher?

4) What current support do you get for lifelong learning?

5) How might the tool assist your lifelong learning?

6) How might the tool boost the quality of teaching or school leadership?

- 7) To what extent do you think that the four major competencies are the 'main areas'? Are there areas missing?

- 8) How clear and accurate were the choice options (i.e. Novice etc)? Would you use other terms?

- 9) How important to you is it that the tool could lead to an accredited and recognised qualification?

- 10) If the tool, were to be the basis for a qualification, how should your ability be assessed? For example, self-assessed, portfolio, through peer interview, through an external meeting, through psychometric testing, assessed at the local school level, assessed by an outside

organisation at a regional level, assessed by a national authority, assessed by an international authority? Other?

11) How important is it to you that if the qualification was accredited that it led to some or all of the following: an award or recognition, pay increases, promotion, ability to work more flexibly, ease of working abroad/internationally (work mobility), foster transnational working? Please comment.

12) If it costs money to be accredited, how much should it be and who should pay to be accredited?

13) How might a qualification like TILL boost the quality and respect of the teaching profession?

14) Do you have any overall reflections, suggestions, modifications you would like to make?

15) What risks, if any, do you see of a potential wider adoption of the TILL framework?

Appendix Three: Self-assessment questions

TiLL self-assessment piloting – Qualitative data

1. How do you evaluate the importance of the areas investigated by TILL? Answer for each of the following by evaluating from 1 = not at all to 5 = very much.
 - a. Meta-Cognition & Cognitive Self-regulation;
 - b. Emotional Self-regulation
 - c. Built on Individual Differences
 - d. Generate a Creative Learning Environment
2. Do you think that the tool you just compiled describes adequately the above-mentioned areas? Do you think it useful and stimulating for a teacher who wants to self-evaluate?
3. Do you think the answer options are clearly and comprehensibly expressed? If not, why? Would you have any suggestion to improve them?
4. Do you know resources and/or opportunities at national or local level to access if you want to improve in one or more of the areas investigated by TILL? If yes, please list them and describe them (if you want, you can insert a link).
5. Would you consider it important that there was a certification of the competences investigated by TILL? If yes, for what reason (recognition at the local level, recognition at national level, international - mobility ...)?
6. Which accreditation model would you find most appropriate? More alternatives can be ticked.
 - a. Peer evaluation
 - b. Portfolio
 - c. Institutionalized certification
 - d. Administration of questionnaires and / or standardized tests

e. Other (please, specify)