



Received: 17 November 2015  
Accepted: 14 July 2016  
Published: 20 September 2016

\*Corresponding author: Jyrki Loima,  
Faculty of Social Sciences and Business  
Studies, University of Eastern Finland,  
P.O. Box 101, Joensuu 80101, Finland  
E-mail: [jyrki.loima@gmail.com](mailto:jyrki.loima@gmail.com)

Reviewing editor:  
Mark Boylan, Sheffield Hallam  
University, UK

Additional information is available at  
the end of the article

## TEACHER EDUCATION & DEVELOPMENT | RESEARCH ARTICLE

# A decision-maker or a collaborator? Reflecting teacher's professional development trends in Thailand

Jyrki Loima<sup>1\*</sup>

**Abstract:** This qualitative article discussed the collaboration skills and pedagogical solutions of Thai teachers and teacher students as those were presented during the academic year 2014–2015. Subsequently, the data were produced by teachers' in-service activities and students' workshops. Discussion adapted the latest research on topic, addressing two questions: (1) Do student teachers and experienced teachers see the modern collaboration skills similarly? (2) What are the main pedagogical solutions Thai teachers and teacher students tend to rely on? In brief, Thai teachers did not seem to be team workers. Sharing any professional information with colleagues was limited. Teacher students were more collaborative inside their age group. Regarding pedagogical solutions, the main trend was teacher centered. Thai teachers thought that teaching on group level also served individual needs and fostered all students' motivation to learn. To develop learning environments to a more interactive direction, more surveys of in-service and preservice needs and skills would be needed.



Jyrki Loima

### ABOUT THE AUTHOR

Jyrki Loima, leading principal of the Viikki Teacher Training School (2002–2014), University of Helsinki, has worked in Finnish academic teacher education and furthermore in various international networks for 15 years, planning, coordinating, leading, and developing studies and in-service programs for classroom and subject teachers, teacher educators, administrators, and principals nationally and globally.

Loima has focused in his foreign consultancy (2003–) on curriculum development, teacher education, institutional management, intercultural topics and teacher educators training as well as research. Loima has been a chair or member of several Finnish educational developing project teams and organizations. He has published academic research and university textbooks, having in toto more than 250 articles. In 2012–2014, Loima lead foreign teacher educator in-service programs for Far East, being previously consulting in e.g. Mosambique (2007–2011). He is currently researching teacher education quality, motivation and learning in Asia and minority/majority interaction as well as comparative studies.

### PUBLIC INTEREST STATEMENT

In various studies, motivating teamwork is regarded as an essential element, which enhances positive action and human performance. In addition to its teaching-related framework, this country case study also gives readers an opportunity to reflect, identify, and analyze international theories in their own case and behavior. Apart from this, how could learning environments be further developed to match into a rapidly changing working life and teamwork skills?

**Subjects: Behavioral Sciences; Education; Humanities**

**Keywords: teacher; teacher student; collaboration; pedagogical skills**

## **1. Introduction**

### **1.1. Facilitating the study—background situation**

Given the opportunity to work in constant collaboration with various educational institutions as well as with faculty members in several Thai universities, the research and teaching years in Thailand 2013–2015 offered an interesting field for closer listening and observation of Thai educators and, in particular, their in-service training teamwork presentations. The period in question gave also an opportunity to reflect the teachers' presentations and interests in in-service occasions which took place in 6–7 different institutions. Processes and conclusion remarks in mentioned workshops and trainings that educational stakeholders and institutions organized (2013–2015) and invited a visiting professor and colleagues to facilitate, revealed repeatedly some characteristics worth of contributing and sharing with colleagues in Thailand and, in particular, elsewhere. This paper does not aim to focus on—or pay special attention to—any particular institution or teachers' group but is based on various teamwork tasks, assessments, outcomes and conversations by teaching professionals in Thailand. Professionals include both the teachers who work at schools and 5th year university student teachers after their six months of teaching practice year. In addition, a few workshops for administration and school managers were included in 2014.

### **1.2. Goals, terms and research questions**

The goal of this contribution is to discuss in brief the repeatedly presented workshop core findings in the field of Thai education, ranging from elementary grades to higher education studies. The core data for these research findings were initiated and contributed by teachers, administrators, and student teachers from university teacher education programs as identifiable main trends and negotiated views of the professionals 2013–2015. Second, this presentation aims to understand those trends and their possible reasons and consequences in the light of qualitative approach. Finally, this article will suggest some ways to further develop solutions for some consideration. To name the main areas of the observed, analyzed and discussed presentations and information, this paper deals with teachers' collaboration skills (cf. 21st century skills; Darling-Hammond, 2010) and collaboration in institutions and, second, pedagogical solutions (Kansanen, 2008; also Niemi, 2012; Vibulphol, Loima, Areesophonpichet, & Ruksapollmuang, 2015). While skills may overall be characterized as tools that enable all kinds of learning in modern institutions, pedagogical solutions here mean the decisions that a single teacher, or a group of teachers, make in any learning environment to enhance the learning opportunities and support the students. Collaboration skills should naturally enhance the teamwork of teachers.

In brief, this paper addressed two research questions (RQs) for the data discussion:

- (1) Do student teachers and professional teachers see the modern collaboration skills similarly?
- (2) What are the main pedagogical solutions Thai teachers and teacher students tend to rely on?

### **1.3. Data collection and discussion in a qualitative nutshell**

How were the data collected? In addition to previously presented, more than 20 workshops altogether at schools, in Educa 2014–2015 presentations and workshops, in in-service events arranged by various stakeholders, and other training occasions the participating teachers, administration and student teachers were asked to briefly summarize and present their teamwork outcomes to their colleagues. The data were the documentation (notes) and summary of those in a written and electronic

format. Presented teamwork diagrams and analyzing patterns were collected with the permission of the participants for further analysis and research purposes. In terms of research ethics no names, institutions, persons or any confidential information that would make identification possible has been contributed or documented to outsiders, when analyzing and also sharing the data in some other connections. Rather than relying on a heavy research-based reference pattern or academic discussion based on studies made elsewhere than in Thailand, this contribution aimed to give space for workshop outcomes and learning processes they may initialize in the light of contemporary studies from inside Thai education. This solution was based on the research outcomes 2014–2015 that showed some peculiar characteristics in Thai education and learning (Loima & Vibulphol, 2014, 2016; Nenthien & Loima, 2016; cf. Palmer, 2009; Reeve, 2009). Consequently, some international studies on skills and teacher education development were added to the discussion for a larger framework and readers' possible interest on further studies and their utilization purposes in various contexts.

## 2. Teachers and their collaboration in institutions

### 2.1. *Main trends of professional behavior: Solos*

An existing working culture mainstream that was revealed in various teamwork presentations from elementary schools to higher education professors and teaching staff was a shared experience that teachers, or researchers, do not collaborate with each other as any team of colleagues or even individually. While this was the common experience among more than 1,000 participants from all the mentioned educational groups, there were also a handful of exceptions. In those few institutions or inner team cases, teaching staff of 4–6 people shared their experiences, best practices and working life problems or worries as well as other information they were willing to share. Unwilling sharing did not take place. On the other hand, a similar non-sharing atmosphere was typical for the faculty researchers, who did not know what their colleagues were studying—or how they could use the new research-based information in their higher education development. No administration orders neither suggestions were needed to facilitate this kind of voluntary, small-scale collaboration of a few teachers that seemed to have similar kinds of mindsets and opinions on the teaching and learning. In conclusion, collaborative skills were developed only inside of those teams in which the teachers “liked” to enhance them. Quite much the same “liking” was a factor that had an enhancing motivational support for the learning of 9th grade students in Bangkok, but also countrywide (Loima & Vibulphol, 2014, 2016). Apart from global educational research trends and suggestions (Dede, 2010; Kansanen, 2008; Niemi, 2012; Pearlman, 2010), Thai teachers preferred to work alone. They also preferred to share information with the colleagues that were liked by them—and who liked them in return. The same trend was evident in more successful learning classrooms of basic education 9th graders. Irrespective of the so obvious need to “belong”, they selected the team they wanted to belong inside the institutions (cf. Alderman, 2008; Loima & Vibulphol, 2014, 2016; Niemi, 2012; also Salmela-Aro, 2009).

### 2.2. *Administrational support did not matter*

On the other hand, in those cases in which administrators expressed their willingness to support the teachers' collaboration, the teaching staff from the same institutions did not seem to have followed these urges systematically (cf. Alderman, 2008; Pearlman, 2010; workshop notes, October 2014; in-service training notes October and December, 2014, January, February and April 2015). The highest levels and most eager willingness to collaborate was found among 460 university students teachers, out of whom several workshop presentations spoke for sharing best practices and lesson planning. Assessment was very seldom discussed together by student teachers, however. It maybe was seen more to be on the teaching practice tutors' responsibilities (Faculty of Education, Chulalongkorn University (CU), n.d.). The student teachers related that sharing with people from the same, or closest, age groups and background experiences was easier for them (cf. Niemi, 2012; workshop presentations in November 2014–January 2015). This finding was similar to the highest motivation and learning findings in the classrooms of 9th graders in Thailand (Loima & Vibulphol, 2016). To “belong” and earn a “membership” in a learning team or other classroom sub-group, the students made the difference that sometimes lead to non-formal feedback other than learning goals or curricula indicated (Loima & Vibulphol, 2016; also Salmela-Aro, 2009).

Instead of seeing a colleague as a support and trustee, teaching professionals as well as administrators described their lonely feelings in front of challenges and problems that the institutions, their development during the school year periods, occurring changes that students—or pupils—were having or had had. Consequently, the problem-solving attempts remained in most cases on the individual level, and no shared “best practices” from any manuals were presented in any of the workshop presentations nor institutions. Problem-solving seemed to be a situation-based interest (Niemic & Ryan, 2009; Reeve, 2009). A careful willingness to share was described to exist but in most cases it had preliminary conditions such as privacy, trusted friend or—as an obstacle—cultural difference that may rise from the age, gender, position, subject boundaries or gained experience. Even if the teachers worked together during the in-service day workshops, they told that they have not been doing that kind of collaboration or sharing in their every-day working life (cf. Niemi, 2012; Palmer, 2009; Salmela-Aro, 2009; Senge, 1990).

### **2.3. Loneliness already in university culture?**

Apart from “lonely professional teachers”, another finding regarding skills was a bit paradoxical. While all the stakeholders—teachers, administration and students—saw the importance of learning organization characteristics, knowhow and professional development (e.g. Pearlman, 2010; cf. Senge, 1990), it was in practice more a private matter and working culture than a common and shareable benefit for all. In terms of developing a real, sharing institutional culture the Thai university teacher education faculties and programs will likely have the most crucial role (Faculty of Education, Chulalongkorn University (CU), n.d.). If the collaboration skills and attitudes were not deeply learned during the pre-service years, it seemed to be highly unlikely that they would be promoted in an institutional atmosphere of any institution, in which different age groups will work together but seemingly not “share” together (cf. Pearlman, 2010; Senge, 1990).

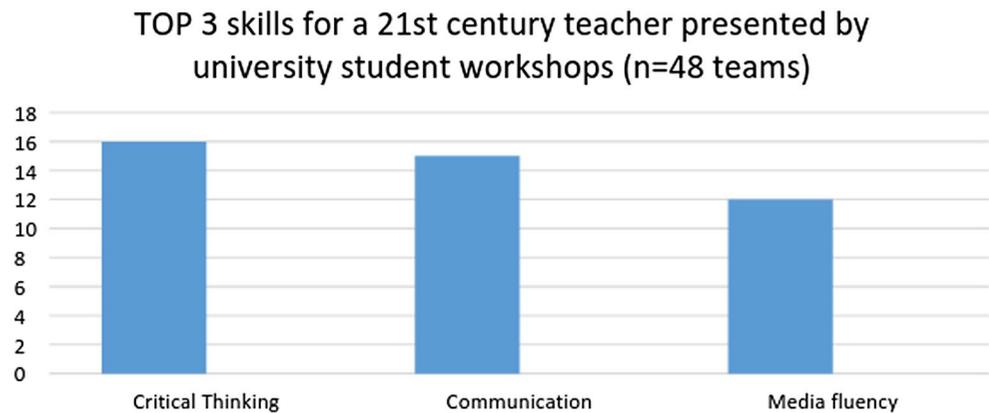
In schools, as learning organizations, it simply may be about merely “learning” how to listen to other colleagues with an adaptive and adjusting attitude. Consequently, how to develop teamwork (collaborative) skills and share one’s best performances with colleagues. Furthermore, how to participate actively in strategic planning and share the visions that have been (or will be) mutually agreed (Darling-Hammond, 2010; Senge, 1990). Those in addition to a few self-leadership skills may make an institution change to a more prompt, responsible, developing and functioning collaborative forum. As Alderman (2008) contributed, a successful school culture has a deep understanding of care-taking about its learners, including all adolescents, beyond the curricula. Finally, all the staff would need a certain kind of internal motivation to work persistently for the organizational good thus benefitting a lot indirectly in terms of learning culture (Alderman, 2008; Loima & Vibulphol, 2016; cf. Salmela-Aro, 2009).

On the other hand, while critical thinking skills repeatedly were lifted up to TOP 3 lists in university student teachers’ works and presentations (workshop presentations November 2014–January 2015), the same thinking skills showed low correlation with an unnamed institution, in which 78 teachers were asked about problem-solving and self-assessment, while the other fields of in-service training teamwork discussion were, for example, overall commitment, information literacy and individual (personal) encouragement. Figure 1 presents the students’ views first.

### **2.4. Skills matter—don’t they?**

University student teachers emphasized in their teamwork tasks skills like critical thinking, communication, media fluency—and adaptation or curiosity (Darling-Hammond & Adamsson, 2014; cf. Pearlman, 2010). Communication had two main functions. First, it was seen to be a teacher communicating effectively with the students—one way. Second, it was regarded to be a collegial communication of the teachers—as an interactive process. During this data collection student teachers’ teams were randomly comprised from 8–10 student teachers from various majors. Subject matter had no main role in their presentation of teachers’ most important competencies and skills—or their meaningfulness. Regardless of the numerical imbalance in the skills that were presented by more

**Figure 1. Top three 21st century skills by university student teamwork presentations in November 2014–January 2015.**

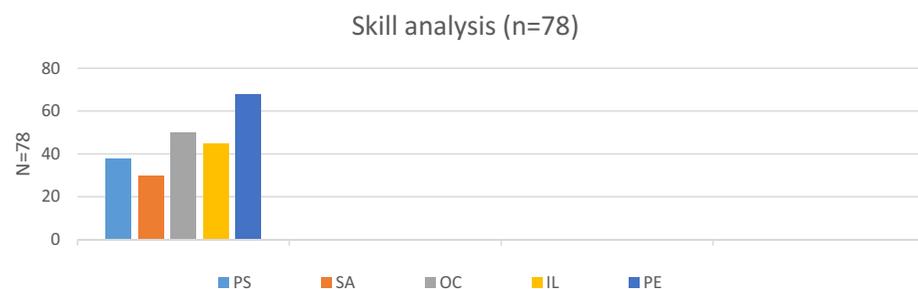


than 450 student teachers and, on the other hand, the working cultures 78 experienced teachers presented as their analysis in another institution, it remains highly interesting to see how different groups have developed their working cultures and understandings.

How was the importance of the skills seen? Student teachers represented their pre-service learning outcomes and visions, while experienced teachers reflected on the basis of their teaching practice years in an institution (Vibulphol et al., 2015). In conclusion, the teaching experience seemed to reduce the willingness for collaboration and skill development that would further enhance cooperative measurements. The longer the experience was, the lower was the willingness to share. In their spoken feedback the university student teachers recognized the same trend—or discouragement given to them at teaching practice schools by their tutoring teachers, if they expressed their willingness for interdisciplinary collaboration (cf. Faculty of Education, Chulalongkorn University (CU), n.d.; McCarthy, 2013; Niemi, 2012; workshop presentations November 2014–January 2015). In the light of these trends, one may ask, whether this discouragement is one of the goals—or learners’ “desirable characteristics”, as it is officially termed in Thailand—for teacher education and teaching practice feedback of university students (see Figure 2).

While problem-solving was not seen as a reflective or sharable skill, the self-assessment done alone or in a small team of teachers was even less of a collaborative practice by nature. A strong trend for individualized input was evident. Approximately every third teacher did kind of selfassessment based on something other than personal feelings—like a colleague’s advice—during the problem-solving process. On the other hand, high levels of commitment indicated also high teachers’ professional ethics and individual morality. Almost every teacher recognized personal encouragement to be a (personal) skill they used often when facing difficulties. In conclusion, the overall scale of the skills in this institution outlined the working culture, in which the teacher worked alone, took responsibilities alone, made solutions alone and did not share positive or other feedback with colleagues by him/herself as a natural means of collaboration (Loima & Vibulphol, 2016; cf. Pearlman, 2010; Niemi, 2012; Skinner, Chi, & The Learning-Gardens Educational Assessment Group, 2012).

**Figure 2. Skill analysis by teachers during in-service training workshops, April 2015. Reflective problem-solving (PS) and self-assessment (SA) compared with overall commitment (OC), information literacy (IL) and personal encouragement (PE) of teachers.**



### 3. Teachers' pedagogical solutions

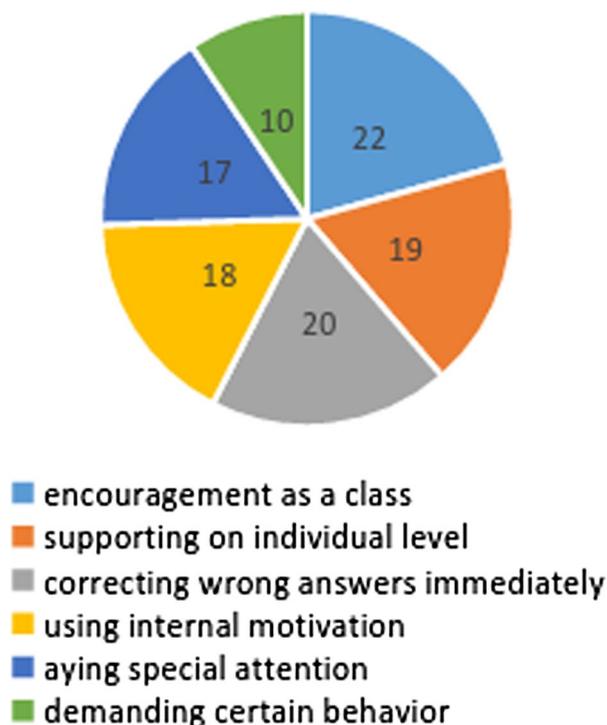
#### 3.1. Methods or pedagogy?

When pedagogical solutions were reflected upon in institutional teams, the main trend was in most cases teacher-centered pedagogy. Regardless of the team composition, the teacher was seen to be the main actor in the classroom. Only a few teams spoke for teacher's facilitative activities in the data from in-services of teachers. On the other hand, quite often the teachers were seen as teaching professionals who should have the "correct" answers and make correction immediately, if the student gave an other than expected answer (cf. Loima & Vibulphol, 2016).

Randomly selected 36 teachers from four main regions of Thailand were asked about their motivational strategies in classroom situation. They could select several alternatives simultaneously from the framework of eight working methods. They were also asked to assess their students' learning during the pedagogical and enhancing methods chosen. The main trends are presented in Figure 3.

The main motivating tendency in this data was to see students as a class entity and treat them as a group. At the same time, and quite often, teachers tended to think that they are also supporting individual learning autonomy when they let the students work after instructions in a whole class size group. In some cases, teamwork enabled students to collaborate and this was another way to support on an individual level, when the teacher had time to talk with the students one by one. Regardless of their years of experience they seemed to think in the same way. Quite discouraging, or externally categorizing from the viewpoint of students, was a popular pedagogical solution to correct the "wrong" answers immediately, if they were other than expected. Subsequently, a lot of the potential knowhow of students was left unused (cf. Kansanen, 2008; Loima & Vibulphol, 2014, 2016; also Nenthien & Loima, 2016; Niemi, 2012). There was an option to let other students complete the answer that seemed to have been not the expected one, but no-one of these 20 "correcting" teachers used it. In a broader context, one may ask whether the group-level methodologies replace the more interactive communication and specific pedagogical thinking (Loima & Vibulphol, 2016; Nenthien & Loima, 2016; cf. Niemi, 2012; also Skinner et al., 2012).

Figure 3. Teaching methods to motivate the students.



### **3.2. Pedagogical needs—submitted to the culture?**

Finally, an interesting finding in terms of classroom dynamics was that teachers felt that teaching on a group level served as a motivating strategy for individual students. They felt they were enhancing students' internal interest and desire to learn more when using external rewards. In a recent case study in Thailand, the students in Bangkok said that the more controlling the teacher was, the lower their motivation was. A regional motivation survey in Thailand indicated that the crucial matter for students' learning and motivation was the similar understanding of their skills, learning and motivation they shared with the teacher during the lesson. In addition to liking, this enhanced the motivation (Loima & Vibulphol, 2014, 2016). In other words, enabling or supporting was not encouraging enough in Thai classrooms, if the assessment of the learning culture on individual and group levels did not match with students' feelings (cf. Assor, Kaplan, & Roth, 2002; Nenthien & Loima, 2016). To get a better perspective, teachers' pedagogical solutions may be viewed from university student teachers' presentations. While in-service teachers spoke more about classroom management, student teachers more often gave space and trusted collaborative, student-centered methods. Out of 36 presented future descriptions, 20 supported student-centered solutions and skills to enhance them as teachers, providing essential pedagogical skills for the future. It means that 66% of the future teachers were ready to develop such, if the culture in institutions would allow them to do so (Nenthien & Loima, 2016; cf. Pearlman, 2010; Vibulphol et al., 2015; workshop presentations November 2014–January 2015). On the other hand, the student teachers emphasized the institutional culture and its "limitations" for free thinking. Consequently, their preferable pedagogy had a precondition and obstacle in terms of institutional "culture".

### **4. Conclusions and suggestions**

The main trends of this multi-institutional survey have showed that Thai teachers—and researchers—preferred to work alone, trusted themselves in problem-solving and in challenges as well. In addition, they felt "lonely" and pedagogically tended to support students on a classroom group level. Methodological mainstream was to see the classroom group level as the main forum of activities which would, subsequently, filter and nourish the individual motivation and learning needs of teachers and students as well.

On the other hand, pre-service student teachers have shown outstanding readiness for other kinds of pedagogical solutions and classroom atmosphere construction—asking for support and encouragement from other students and/or senior colleagues in schools. If the collegial support would not exist, they may get easily discouraged by the "work alone and quietly" culture of the discussed teacher rooms and silent university corridors. No change would then emerge in the institutions and learning atmosphere or communication as interaction. Administrative support alone was not encouraging enough. Consequently, Thai students who already by now have seemingly realized the differences of the outside "real world" with interactive, online virtual environments (Line, Instagram, Facebook) from formal education and classroom cultures with correct knowhow and suitable answers, will play their predictable student roles at schools as expected by teachers and administrators.

As a result of this kind of "double standards" situation and behavioristic understanding of learning in a group of 8–40 students, no real and modern, innovative learning skills or pedagogical thinking will emerge permanently to the classrooms or learning institutions. Once the dynamics are not progressive or innovative but more predictable, the learning outcomes also will remain at a quite modest level, as international comparisons have shown.

Teacher educators and institutional administrators have the keys to a change, however. Giving space and permission, encouraging new interdisciplinary projects and learning environments may together produce outstanding changes in attitudes. So will the change of content pedagogy, if the future teachers were encouraged to give space and active co-facilitating roles for their students. As a result, the educational policy could bear more learning fruits. The attitudes are all that matter in this change for more comparable learning outcomes. If a Thai teacher was up to now a solo worker, s/he should gain teamwork skills and work in a flexible way in any of the institutions. General and

individualized in-service training programs could serve in fostering the pedagogy to the levels that younger, adaptive generations are ready to step on.

To start with, central education administration should urgently give more space and approving understanding to all local levels from elementary education to universities and encourage teachers and teacher educators to perform in a more innovative and creative way. Furthermore, teachers should be sharing the already existing best practices to make their learning institutions more effective and supportive. The ideas and reforms that come top-down, will in most cases just disappear and fade away, since the teaching staff has had no role in moderating them, not to mention motivation or new content requirements. Outsiders should pay less attention to solemn education policy manifestos and focus more on learning skills that enhance motivation, improve classroom working atmosphere and give space for different kind of thinking—and learning manners. Finally, less content and more innovative, focused collaboration would serve the future society much better than an expected outcome from the previous century schooling experiences. Innovation is somewhat else than expected, even in terms of collaboration. Isn't education for the common good, after all?

#### Acknowledgements

The data for this article were collected during the Visiting Professorship invitation in Chulalongkorn University, Bangkok, 2014–2015 as a voluntary and extra product of the scholarship. The author expresses deepest thanks for the Faculty and the Chulalongkorn University. Second, the author's data and contribution were based on the various workshop outcomes and presentations of Thai colleagues during the workshops, research seminars, and in-service trainings run by the author during the period mentioned. Many thanks for the participatory sharing of the collaboration outcomes.

#### Funding

The author received no funding for this research.

#### Author details

Jyrki Loima<sup>1</sup>  
E-mail: [jyrki.loima@gmail.com](mailto:jyrki.loima@gmail.com)

<sup>1</sup> Faculty of Social Sciences and Business Studies, University of Eastern Finland (UEF), P.O. Box 101, Joensuu 80101, Finland.

#### Citation information

Cite this article as: A decision-maker or a collaborator? Reflecting teacher's professional development trends in Thailand, Jyrki Loima, *Cogent Education* (2016), 3: 1215216.

#### References

- Alderman, K. M. (2008). *Motivation for achievement* (3rd ed.). New York, NY: Routledge.
- Assor, A., Kaplan, H., & Roth, G. (2002). Choice is good, but relevant is excellent: Autonomy-enhancing and suppressing teacher behaviors predicting students' engagement in school work. *British Journal of Educational Psychology*, 72, 262–278.
- Darling-Hammond, L. (2010). *New policies for 21st century demands*. In J. Bellanca & R. Brandt (Eds.), *21st century skills: Rethinking how students learn* (pp. 33–49). Bloomington, IN: Solution Tree Press.
- Darling-Hammond, L., & Adamsson, F. (2014). *Beyond the bubble test: How performance assessments support 21st century learning*. San Francisco, CA: Jossey-Bass, Wiley.
- Dede, C. (2010). Comparing frameworks for 21st century skills. In J. Bellanca & R. Brandt. (Eds.), *21st century skills: Rethinking how students learn* (pp. 51–75). Bloomington, IN: Solution Tree Press.
- Faculty of Education, Chulalongkorn University (CU). (n.d.). หลักสูตร [Curriculum]. Retrieved from <http://portal.edu.chula.ac.th/academic/view.php?Page=1243999546337277>
- Kansanen, P. (2008). Distinctive highlights of Finnish teacher education. In J. Loima (Ed.), *Facing the future: Developing teacher education* (pp.48–68). Helsinki: Helsinki University Press.
- Loima, J., & Vibulphol, J. (2014). Internal interest of external performing? A Qualitative study on motivation and learning of 9th graders in Thailand basic education. *Journal of Education and Learning*, 3, 194–203. doi:10.5539/jel.v3n3p194
- Loima, J., & Vibulphol, J. (2016). Learning and motivation in Thailand: A comparative regional study on basic education ninth graders. *International Education Studies*, 9. doi:10.5539/ies.v9n1p31, Retrieved from <http://dx.doi.org/10.5539/ies.v9n1p31>
- McCarthy, R. (2013). *Mapping transversal/non-cognitive skills in education* [News from UNESCO Bangkok]. Retrieved from <http://www.unescobkk.org/news/article/mappingtransversalnon-cognitive-skills-in-education/>
- Nenthien, S., & Loima, J. (2016). Teachers' motivating methods to support thai ninth grade students' levels of motivation and learning in mathematics classrooms. *Journal of Education and Learning*, 5. ISSN 1927-5250 (Print), ISSN 1927-5269 (Online). doi:10.5539/jel.v5n2p250
- Niemi, H. (2012). Relationships of teachers' professional competences, active learning, and research studies in teacher education in Finland. *Reflection Education*, 8, 23–44.
- Niemiec, C. P., & Ryan, R. M. (2009). Autonomy, competence, and relatedness in the classroom: Applying self-determination theory to educational practice. *Theory and Research in Education*, 7, 133–144. Retrieved from <http://dx.doi.org/10.1177/1477878509104318>
- Palmer, D. H. (2009). Student interest generated during an inquiry skills lesson. *Journal of Research in Science Teaching*, 46, 147–165. Retrieved from <http://dx.doi.org/10.1002/tea.20263>
- <http://dx.doi.org/10.1002/tea.v46:2>
- Pearlman, B. (2010). Designing new learning environments to support 21st century skills. In J. Bellanca & R. Brandt (Eds.), *21st century skills: Rethinking how students learn* (pp. 117–148). Bloomington, IN: Solution Tree Press.
- Reeve, J. (2009). Why teachers adopt a controlling motivating style toward students and how they can become more autonomy supportive. *Educational Psychologist*, 44, 159–175. doi:10.1080/00461520903028990

Salmela-Aro, K. (2009). Personal goals and well-being during critical life transitions: The four C's—Channelling, choice, co-agency and compensation. *Advances in Life Course Research, 14*, 63–73. doi:10.1016/j.alcr.2009.03.003

Senge, P. (1990). *The fifth discipline: The art and practice of the learning organization*. New York, NY: Doubleday.

Skinner, E. A., Chi, U., & The Learning-Gardens Educational Assessment Group. (2012). Intrinsic motivation and engagement as “active ingredients” in garden-based

education: Examining models and measures derived from self-determination theory. *The Journal of Environmental Education, 43*, 16–36. doi:10.1080/00958964.2011.596856

Vibulphol, J., Loima, J., Areesophonpichet, S., & Rukspollmuang, C. (2015). Ready contents or future skills? A comparative study of teacher education curricula in Thailand and Finland. *Journal of Education and Learning, 4*, 2015. doi:10.5539/jel.v4n4p149



© 2016 The Author(s). This open access article is distributed under a Creative Commons Attribution (CC-BY) 4.0 license.

You are free to:

Share — copy and redistribute the material in any medium or format  
Adapt — remix, transform, and build upon the material for any purpose, even commercially.  
The licensor cannot revoke these freedoms as long as you follow the license terms.

Under the following terms:

Attribution — You must give appropriate credit, provide a link to the license, and indicate if changes were made.  
You may do so in any reasonable manner, but not in any way that suggests the licensor endorses you or your use.  
No additional restrictions

You may not apply legal terms or technological measures that legally restrict others from doing anything the license permits.



**Cogent Education (ISSN: 2331-186X) is published by Cogent OA, part of Taylor & Francis Group.**

**Publishing with Cogent OA ensures:**

- Immediate, universal access to your article on publication
- High visibility and discoverability via the Cogent OA website as well as Taylor & Francis Online
- Download and citation statistics for your article
- Rapid online publication
- Input from, and dialog with, expert editors and editorial boards
- Retention of full copyright of your article
- Guaranteed legacy preservation of your article
- Discounts and waivers for authors in developing regions

**Submit your manuscript to a Cogent OA journal at [www.CogentOA.com](http://www.CogentOA.com)**

