

MODIFIED LESSON STUDY WITHIN THE INTEGRATED TEACHING-LEARNING FRAMEWORK FOR TRAINING OF SPECIAL EDUCATION PROFESSIONALS

Noel Kok Hwee Chia

National Institute of Education, Nanyang Technological University,
SINGAPORE.

kokhwee.chia@nie.edu.sg

ABSTRACT

Lesson Study (LS) has its humble beginning in Japan during the Meiji period as a result of a concerted effort initiated by a group of dedicated Japanese teachers with the hope to improve their pedagogy so that their students could benefit from what they taught. In this paper, the focus is on modifying or adapting the current LS approach so that it can be used by special education teachers working with students with special needs in either mainstream or special education schools. The proposed modification of LS is done within the integrated teaching-learning framework, which is made up of the Triple-D teaching model consisting of diagnostics, dialogics and didactics and the Triple-T learning model consisting of episteme, telos and techne.

Keywords: Integrated Teaching-Learning Framework, Lesson Study, Special education, Triple-D Model of Teaching, Triple-T Model of Learning

INTRODUCTION

In Singapore, special education professionals (SEPs) consist of special needs therapists (SNTs), special school teachers (SSTs), and allied educators providing learning and behavioral support (AEDs/LBS) for students with special needs. Their professional training and development varies from one institution to the next. There are many private institutions such as the Academy of Certified Counselors and the College of Allied Educators that conduct part-time and full-time classes for those who want to practice in the field of Special Education (SPED). Only the National Institute of Education (NIE) at the Nanyang Technological University is publicly funded to provide all levels of teacher education, from pre-service teacher training programs to professional development programs for in-service teachers and executive school leadership programs covering a wide scope of domains in education including early childhood education, general education, special education and specialized academic subject education. However, admission into the NIE requires an applicant to possess a good General Certificate of Education at Advanced Level (GCE-A Level) or a polytechnic diploma with good results in relevant specializations such as psychology, counseling and early childhood education. Unlike the NIE, the private institutions do not have stringent criteria for admission into their training and development programs in special education.

At the NIE, the training of SSTs and AEDs/LBS involves a systematic approach involving Assessment, Planning, Implementation and Evaluation (APIE) cycle and the model is presented as a systematic manner of approaching intervention planning, implementation, and evaluation of programs for students with special needs (Poon et al., 2008). The model complements the ecological framework that covers the classroom, the school and the external (outside school) environments. Within the classroom context, four factors – peer, teacher,

physical setting, and curriculum and resource – are taken into careful consideration in terms of their impact on the student as an individual in his/her class (Chia & Kee, 2012a).

However, Chia and Kee (2013) modified the APIE model to make teaching and learning more explicit for training of SEPs to capture the essence of both processes: the Triple-D model of teaching and the Triple-T model of learning. To Chia and Kee (2012a), the training for the SEPs involves a clear understanding of the role of an SEP to be able to perform the following professional duties: (1) diagnosing a learning and/or behavioral issue of concern, (2) dialoguing with the client to establish a clear understanding of his/her issue of concern, and (3) *didactisizing* (as coined by Oerbaek, 2009) so that the client can learn to manage or cope with the issue of concern. Hence, a different systematic approach known as *psychogogy* (see Chia & Kee, 2012b; Chia & Ng, 2011) incorporates diagnostics (to determine the learning and/or behavior challenges), dialogics (to consult and verify the challenges) and didactics (to teach or intervene), i.e., the three components in the Triple-D model of teaching. In addition, Chia and Kee (2013) also saw the need for SEPs to take the perspective of a learner with special needs seriously in order to understand (1) what content knowledge and skills that need to be taught, (2) the reasons behind teaching the required knowledge and skills, and (3) the right or appropriate strategies to be used in imparting knowledge and skills. This systematic approach to the understanding of learning incorporates *epistēmē*, *telos* and *techné* (i.e., the three components in the Triple-T model of learning).

The Triple-D Model of Teaching for SEP Training and Development

The concept of psychogogy embraces three essential components – diagnostics, dialogics and didactics – which triangulate to form what Chia and Kee (2012b) have termed as the Triple-D framework for SEP training (see Figure 1). This framework fits in nicely for the training of SEPs. Each of these three components will be defined and briefly discussed below.

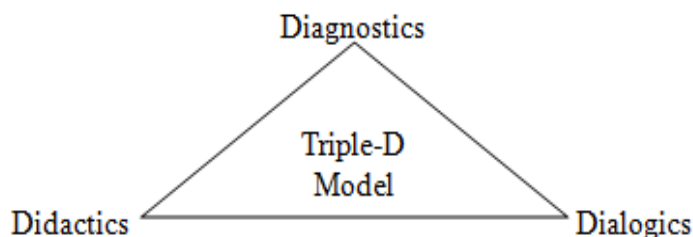


Figure 1. Triple-D framework for SEP training

Diagnostics

It is also known as educational diagnostics. This evidence-based *Psycho-Educational Diagnostic Evaluation and Profiling* (PEDEP) of a student suspected to have learning and/or behavioral challenges adopts a trans-disciplinary approach that requires a SEP to know and understand different levels and types of assessment (formal and/or informal) in order to establish the student's profile in terms of his or her strengths, preferences and needs so that decision can be made concerning about what the student is learning or going to learn.

Dialogics

According to Chia and Kee (2012b), they have defined *dialogics* as the process whereby communicating parties mutually reaches agreement of the intended communication with verification of each other perceived perspective and contextual understanding, perceived use and relationship of communicated concepts and perceived meanings (Todorov, 1984).

Didactics

The term *didactics* means to teach, to educate (Chia & Kee, 2012a). It can also mean “having the ability to teach, the people who have the ability to teach, the content taught, teaching aids, including methods and media, the school and the classroom where learning takes place, and learning as the main activity of pupils” (Gundem, 1998, p.19-24). It concerns a practitioner’s reflection of practice in terms of how he/she can realize his/her educational objective. Didactics must not be confused with pedagogy – “the theory of second order educational reflection – that concerns the unity of education and reflection of education. The subject of didactics is educational methodology, while the subject of pedagogy is educational theory” (Qvortrup, 2007, para.3).

Triple-T Model of Learning for in SEP Training and Development

According to Chia and Kee (2013), “[T]he goal of learning within the SPED field focuses on the functional mastery of the essential content knowledge and skills needed for independent living and survival of an individual with a disability” (p.422). The three key T-components in the Triple-T model of learning are: (1) *epistēmē* (“what” of learning); (2) *Techné* (“how” of learning); and (3) *Telos* (“why” of learning). Together, they are triangulated to form the Triple-T model of learning (see Figure 2).

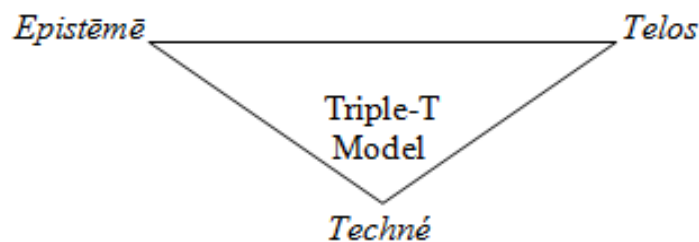


Figure 2. Triple-T model of learning

Techné

The term *techné* is a Greek derivative that refers to how an object or objective in learning is accomplished. In other words, it is the “how of learning” or teaching strategies used in special education. In choosing the appropriate teaching strategies to work with students with special needs, the SEPs need to consider two important factors: (1) the type of disability and (2) its degree of severity. All teaching strategies in SPED can be classified under two main categories: accommodations and modifications. Students with disabilities may receive both accommodations, which involve provision of an appropriate adjustment to the teaching resources used during lesson so as to make learning accessible to such students, and modifications, which change or adapt teaching/learning materials to make them user friendly for these students (see Chia & Kee, 2013, for detail).

Epistēmē

The Greek derivative, *epistēmē*, for knowledge or “to know” is distinguished from *techné*. The term is the “what of learning”, i.e., the content knowledge and skills that are needed to be taught to or learnt by students with special needs. *Epistēmē* resembles *techné* in the implication of knowledge of principles, although *techné* differs from *epistēmē* in that its intent is making or doing, as opposed to “disinterested understanding” (Chia & Kee, 2013, p.423).

Telos

Telos is a Greek derivative that refers to the end term of a goal-directed learning process or the final cause. It is the “why of learning” or “the rationale or reasons behind the choice of content knowledge and skills selected to be included in the design of SPED curriculum” (Chia & Kee, 2013, p.423).

Integration of Triple-D Model of Teaching and Triple-T Model of Learning

Briefly, the Triple-D model of teaching and the Triple-T model of learning (to be elaborated later) can be integrated to form a holistic teaching-learning framework (see Figure 3) to be applied in training SEPs for working with students with special needs in both mainstream and special education schools.

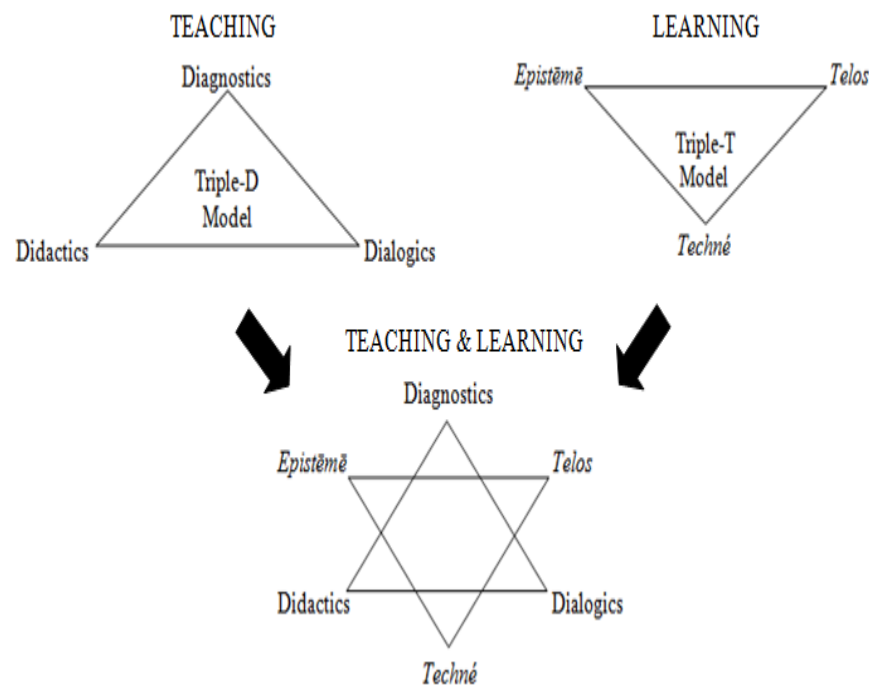


Figure 3. Integrated teaching-learning framework

Within the integrated teaching-learning framework, all trainee SEPs will be trained to explore how student learning, thinking and behavior change as a result of a lesson taught (Cerbin & Kopp, 2006). This approach known as Lesson Study (LS) can help improve instruction as SEPs become more knowledgeable about how their students with special needs learn and think, and how their instruction can affect student learning and thinking.

A BRIEF INTRODUCTION TO LESSON STUDY

The landscape of special education has evolved over time to become a process of professional training and development for both qualified and trainee SEPs. One good example is the Lesson Study (LS), originated in Japan, as a result of a concerted effort initiated by a group of dedicated Japanese teachers committed to improving their lessons (Fernandez, 2002).

LS is a unique approach that has its humble genesis in Japan as a result of a concerted effort initiated by a group of dedicated teachers with a desire to work together to research teaching materials, develop lesson plans and practise teaching lessons. The underlying practice of LS is threefold (Stephens & Isoda, 2007): (1) Teachers can learn best from each other and

improve their practice by observing how other teachers deliver their lessons; (2) Teachers are encouraged to share their experience and expertise in terms of their acquired tacit pedagogical knowledge and skill in subject matter with other colleagues; and (3) LS focuses on the cultivation of students' interest to learn and on the quality of their learning.

In simple terms, LS caters to students who have yet to grasp the full understanding of subject matter or skill being taught or to be learnt through instructional improvement. Lewis (2011) has identified four main phases in the original LS cycle: (1) Study curriculum and formulate goals; (2) Plan a research lesson based on the formulated goals; (3) Conduct research lesson – to be taught by one teaching staff while the others observe and collect data; and (4) Reflect: share data and use data to illuminate student learning.

In Singapore, the original LS approach has been modified to meet the unique needs of SPED schools. Students in these special schools are not typically developing and will need additional support from their SPED teachers. Chia and Kee (2010; 2011) have designed their modified LS as shown below:

Phase 1: Examine the case history

- I. Establish a LS committee that oversees cases of students with learning and behavioural challenges in school.
- II. Evaluate cases by the committee:
 - a. Case conference with parents & school personnel involved in the case;
 - b. Evaluation of the psycho-educational/behavioural assessment reports;
 - c. Review of academic achievement test results; and
 - d. Review of self-esteem profile results.
- III. Profile the case by the committee:
 - a. Identification of learning and/or behavioral difficulties; and
 - b. Decision to be made on whether or not any further assessment is required.
- IV. Set intervention goals(s) collaboratively by the committee:
 - a. Decision on the lesson focus;
 - b. Planning of long-term and short-term intervention goals in terms of inputs, operations, outputs and benchmark criteria; and
 - c. Design of the individualized education program/plan.

Phase 2: Lesson planning

- I. Decide on whether the lesson planning is for withdrawal session or in-class support session (Chia & Kee, 2010);
- II. Cross-reference the lesson objects with the IEP objectives to ensure they match what is to be covered;
- III. Hold a pre-lesson conference among the members of the Lesson Study committee who are involved in the case; and
- IV. Draft a lesson plan in collaborative consultation with the coaches, mentors and/or coach-mentors in the LS committee (Chia & Kee, 2010).

Phase 3: Lesson presentation

- I. Conduct the lesson with a student (individually or in a small group) for withdrawal session or a group of students during the in-class support session (Chia & Kee, 2010).

- II. Observe the lesson (by the members of the LS committee, i.e., coaches and mentors) and/or an external knowledgeable other (e.g., coach-mentor).
- III. Provide feedback by the LS committee with or without an external professional on what has been observed during lesson. This is debriefing or post-lesson conference (Chia & Kee, 2010).

Phase 4: Lesson revision and re-teaching

- I. Revise the lesson after post-lesson conference.
- II. Identify needed changes to the lesson plan.
- III. Re-teach the lesson as a form of revision to the same individual student or group of students (either during withdrawal or in-class support session).

Phase 5: Reflection and sharing of results

- I. Provide personal reflections from members of the LS committee basing on the lesson taught, recorded or observed.
- II. Formally evaluate the lesson taught with the focus on student learning.
- III. Archive the case/lesson plans to be used for future case conference or reference (Chia & Kee, 2010).

Incorporating LS in the Triple-D Model of Teaching

When the modified LS is placed within the Triple-D framework for the SEP training and development, the following eight phases are created (Chia & Kee, 2012a) (see Figure 4):

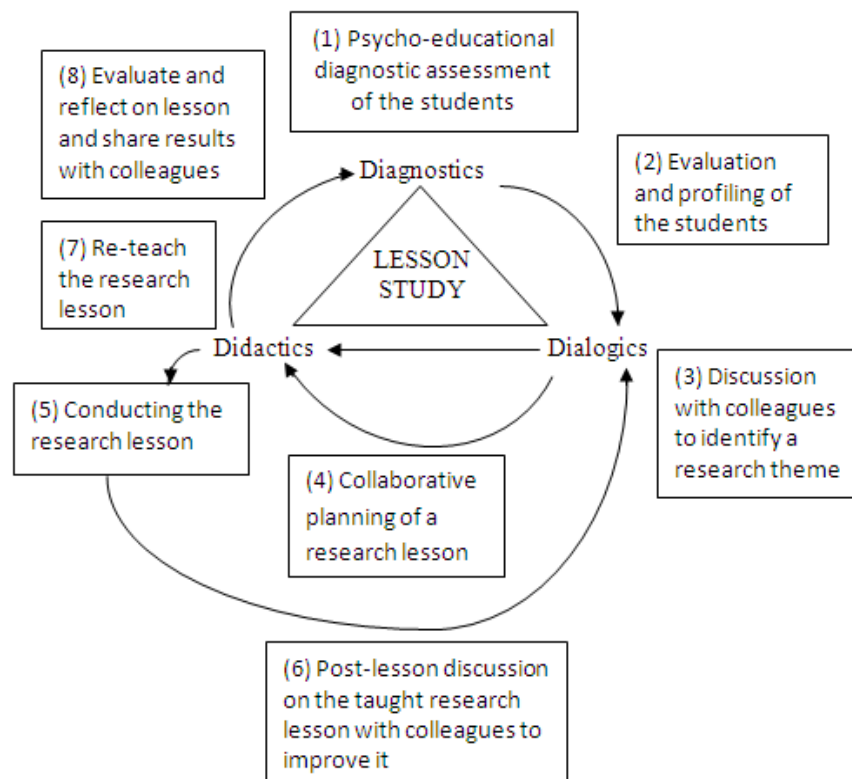


Figure 4. Modified lesson study within the triple-D framework

Briefly, all the eight phases can be summarized as follows:

1. Diagnostics:
 - a. Psycho-educational assessment of the students; and
 - b. Evaluation and profiling of the students;
2. Dialogics:
 - a. Discussion among colleagues to identify a research theme; and
 - b. Collaborative planning of a research lesson;
3. Didactics:
 - a. Conducting of the research lesson;
 - b. Post-lesson discussion on the taught research lesson with colleagues to improve it; and
 - c. Re-teaching of the research lesson; and
4. Dialogics→Diagnostics:
 - a. Evaluation of and reflection on the research lesson before sharing the results with other colleagues; and
 - b. Check on the students' psycho-educational assessment results using the new data collected from the research lesson to see if there is any improvement.

Incorporating LS in the Triple-T Model of Learning

When the modified LS is placed within the Triple-T framework for the SEP training and development, the following ten phases are created (see Figure 5):

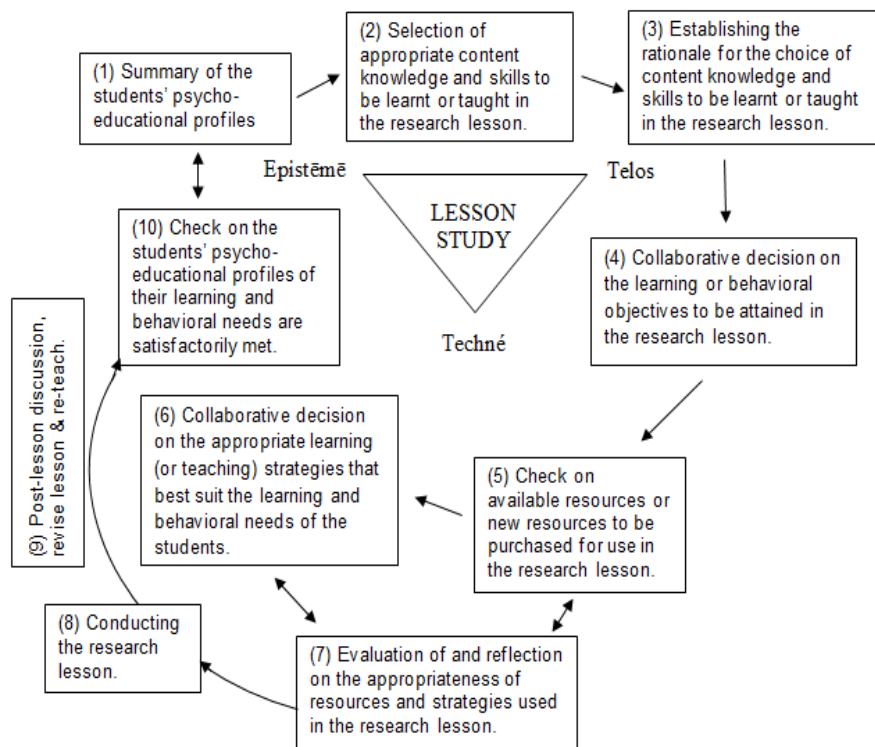


Figure 5. Modified lesson study within the triple-T framework

Briefly, all the ten phases can be summarized as follows:

1. Epistēmē:
 - a. Summarizing of the students' psycho-educational profiles; and
 - b. Selection of appropriate content knowledge and skills to match the students' psycho-educational profiles in planning a research lesson;
2. Telos:
 - c. Establishing of the rationale for the choice of content knowledge and skills to be learnt by the students in the research lesson; and
 - d. Collaborative decision on the learning or behavioral objectives to be attained in the research lesson;
3. Techné:
 - e. Check on the available resources that are appropriate for use in the conduct of the research lesson;
 - f. Collaborative decision on whether there is a need to purchase new resources; and
 - g. Collaborative decision on the appropriate learning (or teaching) strategies – accommodations or modifications – that best suit the learning and behavioral needs of the students;
 - h. Conducting the research lesson; and
4. Techné→Telos:
 - i. Post-lesson discussion (e.g., focus on the rationale) on the taught research lesson with colleagues;
 - j. Revision of the research lesson in collaborative consultation with colleagues;
 - k. Re-teaching of the revised research lesson
5. Techné→Epistēmē:
 - l. Evaluation of and reflection on the appropriateness of resources and strategies used in the research lesson; and
 - m. Check if the students' psycho-educational profiles of their learning and behavioral needs are satisfactorily met.

CONCLUSION

According to Cerbin (2011), using classroom inquiry in the LS can help to improve teaching and learning. In the case of the modified LS within the integrated teaching-learning framework comprising of the Triple-D model of teaching and the Triple-T model of learning, the underlying idea is that SEPs can best learn from and improve in their pedagogical practice by observing how their colleagues go about teaching students with special needs and how these students can learn, think and/or problem-solve. There is an expectation that SEPs who have developed deep understanding of and skill in subject matter teaching should be encouraged to share their knowledge and experience with colleagues (Stephens & Isoda, 2007). While the focus seems to be on the performance of the SEP, the final focus is still targeted at the performance of students with special needs in terms of the quality of their learning and behavior. With regular cycles of refinement that constitute the core of LS, it only makes sense in terms of quality of improvement in student's learning as well as behavior (Chia & Kee, 2010, 2011; Stephens & Isoda, 2007).

In brief, the modified LS is an excellent approach to professional development whereby SEPs collaborate with one another to develop a lesson plan based on the students' psycho-educational diagnostic evaluation reports and profiles as well as their respective individualized education plans, teach and observe the lesson as well as to collect data on student learning and behavior, and also use their observations to refine their lesson (Stepanek et al., 2007). "It is a process rather than a product – a means through which SEPs continuously engage in learning more about best or effective teaching practices in order to improve the student learning and behavioral outcomes" (Chia & Kee, 2010, p.2).

Appendix A summarizes the phases of the modified LS under the Triple-D model of teaching and the Triple-T model of learning.

REFERENCES

- Cerbin, B. & Kopp, B. (2006). Lesson study as a model for building pedagogical knowledge and improving teaching. *International Journal of Teaching and Learning in Higher Education*, 18(3), 250-257.
- Chia, N. K. H. & Kee, N. K. N. (2010). *Teaching practicum workbook for special education trainees: A modified lesson study approach*. Singapore: McGraw-Hill.
- Chia, N. K. H. & Kee, N. K. N. (2011). Lesson study as a formative assessment of pre-service special education (SPED) teacher trainees' teaching practicum. *ASCD-Singapore Review*, 16, pp.52-62.
- Chia, N. K. H. & Kee, N. K. N. (2012a, Summer). The triple-D framework (diagnostics, dialogics and didactics) for training of special education professionals in Singapore. *Unlimited Human!*, 36-46.
- Chia, N. K. H. & Kee, N. K. N. (2012b). *Harnessing iPad for lesson study within the triple-D framework in special education*. Paper presented at the 6th International Convention on Rehabilitation Engineering & Assistive Technology, 24-26 July 2012, at ITE College East, Singapore.
- Chia, N. K. H. & Kee, N. K. N. (2013). An integrated teaching-learning framework for special education in Singapore. *Academic Research International*, 4(2), 416-426.
- Chia, N. K. H. & Ng, A. G. T. (2011). *Psychogogy: Redesigning pedagogy for special and allied educators*. Retrieved from <http://www/lsesnet.com/blog/>
- Fernandez, C. (2002). Learning from Japanese approaches to professional development: the case of lesson study. *Journal of Teacher Education*, 53, 393-405.
- Gundem, B. B. (1998). *Understanding European Didactics: An Overview on Didactics*. Institute for Educational Research Report No.4. Oslo, Norway: University of Oslo.
- Lewis, C. (2011, June 2-3). Lesson study: Can it promote student, teacher, and system learning? In *2nd Lesson study symposium: Enhancing learning through lesson study*. Singapore: The Academy of Principals.
- Oerbaek, K. (2009). *Didactics and didactisizing*. Unpublished Doctor of Philosophy (PhD) dissertation, University of Southern Denmark-Odense.
- Poon, K. K. et al., (2008). The assessment, planning, implementation and evaluation (APIE) cycle as a linked system of support. In K.K. Poon et al (Eds.), *Supporting students with special needs in mainstream schools: A linked system of support* (pp.1-9). Singapore: Pearson/Prentice Hall.
- Qvortrup, L. (2007). Media Pedagogy, media Education. Media Socialization and Educational Media. *Seminar.net: International Journal of media, Technology and Lifelong Learning*, 3(2), 1-20.
- Stepanek et al., (2007). *Leading lesson study: A practical guide for teachers and facilitators*. Los Angeles: Corwin Press.
- Stephens, M. & Isoda, M. (2007). Introduction to the English translation. In M. Isoda et al. (Eds.), *Japanese lesson study in mathematics: Its impact, diversity and potential for educational improvement*. Singapore: World Scientific Publishing, pp. xv-xxiv.
- Todorov, T. (1984). *Mikhail Bakhtin: The dialogical principle* (trans. Wlad Godzich). Minneapolis, MN: University of Minnesota Press.

APPENDIX-A

<i>Triple-D Model of Teaching</i>	<i>Modified Lesson Study</i>	<i>Triple-T Model of Learning</i>	<i>Modified Lesson Study</i>
Diagnostics	1. Administer psycho-educational assessment of the student(s)	Epistēmē	1. Summarize the students' psycho-educational profiles
	2. Check and cross-check the assessment results		2. Select appropriate content knowledge & skills to match the students' psycho-educational profiles in planning a research lesson
	3. Evaluate & profile the student(s) based on the assessment results	Telos	3. Establish the rationale for the choice of content knowledge & skills to be learnt by the students in the research lesson
	4. Check and prepare a diagnostic summary of the student concerned		4. Decide collaboratively on the learning or behavioral objectives to be attained in the research lesson
Dialogics	5. Discuss with colleagues to identify a research theme	Techné	5. Check on the available resources that are appropriate for use in the conduct of the research lesson
	6. Check on the available resources and/or expertise to meet the research theme		6. Decide collaboratively on whether there is a need to purchase new resources
	7. Plan a research lesson collaboratively		7a. Decide collaboratively on the appropriate strategies that best accommodate the students' learning & behavioral needs
	8. Check to see if the research lesson meets the objectives of the research theme		7b. Decide collaboratively to modify strategies that best suit the students' learning & behavioral needs
Didactics	9. Conducting the research lesson		8. Conducting the research lesson
	10. Check during the lesson observation on the verbal and/or non-verbal responses of the student(s) to the research lesson taught		
	11. Post-lesson discussion on the taught research lesson with colleagues	Techné→Telos	9. Post-lesson discussion on the taught research lesson with colleagues
	12. Check those areas of the research lesson that need to be revised or improved		10. Revise the research lesson in collaborative consultation with colleagues
	13. Re-teach the research lesson		11. Re-teach the revised research lesson
	14. Check during the repeated lesson observation		12. Check and evaluate the appropriateness of resources &

	on the verbal and/or non-verbal responses of the student(s) to the revised research lesson taught		strategies used in the research lesson
Didactics→ Dialogics	15. Reflect & record findings to share with others interested to know & learn	Techné→Telos (continued)	13. Reflect on the appropriateness of resources and strategies used in the research lesson
Dialogics→ Diagnostics	16. Check on the results of the psycho-educational assessment reports of the student(s) using the new data collected from the research lesson to see if there is any improvement.	Techné→ Epistēmē	14. Check if the students' psycho-educational profiles of their learning & behavioral needs are satisfactorily met