THEMATIC CASE STUDY

Continuing Professional Development and Sustainability

A study of continuing professional development and the sustainability of benefits in Indonesia from INOVASI's pilots

June 2020

INOVASI
Innovation for Indonesia's School Children
Australia Indonesia Partnership

KEMENTERIAN PENDIDIKAN DAN KEBUDAYAAN

Australian Government

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The governments of Australia and Indonesia are partnering through the Innovation for Indonesia's School Children (INOVASI) program. INOVASI seeks to understand how to improve student learning outcomes in literacy and numeracy in diverse schools and districts across Indonesia. The first phase of the program (AUD49 million) began in January 2016 and will continue until June 2020. Working with Indonesia's Ministry of Education and Culture, INOVASI has formed partnerships with 17 districts in four provinces namely West Nusa Tenggara, East Nusa Tenggara, North Kalimantan, and East Java.

INOVASI is an Australia-Indonesia Government partnership, managed by Palladium

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List of Acronyms, Abbreviations and Bahasa Indonesia Terms

Abbreviations and Acronyms	Explanation
ADB	Asian Development Bank
APBD	Anggaran Pendapatan dan Belanja Daerah (Local government budget)
AusAID	Australian Agency for International Development
BOS	Bantuan Operasional Sekolah (School operational assistance fund)
BOSDA	Bantuan Operasional Daerah (District school operational assistance fund)
Bupati; Wakil Bupati	Regent; Deputy Regent (District council head)
CBSA	Cara Belajar Siswa Aktif (Student Active Learning, a British Council project)
CLCC	Creating Learning Communities for Children (UNICEF-UNESCO)
CPD	Continuing (or continuous) professional development
DBE	Decentralized Basic Education (a USAID project)
DFAT	Department of Foreign Affairs and Trade
Diseminasi	Dissemination
EOPO	End of project outcome
Fasda	Fasilitator daerah (District facilitator)
IAPBE	Indonesia Australia Partnership in Basic Education (an AusAID project)
INOVASI	Innovation for Indonesia's School Children (a DFAT program)
INSET	In Service Education and Training
JICA	Japan International Co-operation Agency
KKG	Kelompok kerja guru (Teachers' working group)
KKG-Kabupaten	Kelompok kerja guru-kabupaten (district teachers' working group)
KKG-mini	Kelompok kerja guru-mini (a school's teachers' working group)
KKKS	Kelompok Kerja Kepala Sekolah (School principals' working group)
KKPS	Kelompok Kerja Pengawas Sekolah (School supervisors' working group)
LAPIS	Learning Assistance Program for Islamic Schools (an AusAID project)
LPMP	Lembaga Penjaminan Mutu Pendidikan (Provincial quality assurance institute)
Madrasah	Islamic school

Abbreviations and Acronyms	Explanation
MBE	Managing Basic Education (a USAID project)
MoU	Memorandum of Understanding
NGO	Non-government Organisation
NTT-PEP	Nusa Tenggara Timur Primary Education Partnership (an AusAID project)
Paguyuban Kelas	Parents' class association
PAKEM	Pembelajaran yang Aktif, Kreatif, Efektif dan Menyenangkan (Active, creative, effective and enjoyable learning)
PDIA	Problem-driven iterative adaptation
PRIORITAS	Prioritizing Reform, Innovation, and Opportunities for Reaching Indonesia's Teachers, Administrators, and Students (a USAID project)
ProDep	Professional Development for Education Personnel (a component of the AusAID/DFAT Australian Education Partnership with Indonesia)
REDIP	Regional Education Development and Improvement Program (a JICA project)
SMP	Sekolah Menengah Pertama (junior secondary school)
SD	Sekolah Dasar (primary school)
UNICEF	United Nations Children's Fund
USAID	United States Agency for International Development
USD	United States dollar

ABSTRACT

INOVASI's approach to improving learning outcomes in early grades is through a strategy known as problem-driven iterative adaptation (PDIA). Development strategies begin with understanding local challenges, and designing, implementing, and testing contextually-relevant intervention pilots to improve learning and teaching. Working with local communities of practice, the teachers' working group, is a key strategy. The continuing professional development (CPD) of teachers, principals and supervisors is the common approach to achieve change.

This study explores whether INOVASI's approach works – and why – with a focus on the CPD of early-grade teachers through short courses in literacy, numeracy and supporting issues. The study further considers the sustainability and scale-out of benefits to local stakeholders. INOVASI's approach to CPD, sustainability, and scale-out is consistent with the findings of studies published in the international and local literature. Used as a benchmark, these studies indicate no shortcomings in either INOVASI's design or implementation of change. This outcome is reflected in the success of the work being undertaken in districts and schools. The evidence is that INOVASI and its Indonesian partners are working at the cutting-edge of sound, educational development practice in school reform to achieve improved learning outcomes in literacy and numeracy for children.

The success of INOVASI's approach is due to its alignment with government policies, with the needs of teachers and schools, and with the evidence for educational change. The findings of the study confirm that PDIA principles are relevant in helping Indonesian education to become 'unstuck' in its progress towards achieving quality outcomes at scale, and in explaining what works and why in CPD and the sustainability and scale-out of benefits.

Case studies from East Java provide insights into how the processes of sustainability and scale-out have operated, demonstrating the face-validity of a set of indicators developed for the study. Further work is essential to develop an understanding of sustainability and the scale-out of benefits in other cultural contexts in Indonesia where INOVASI is also working.

School improvement must be managed on a continuing basis and not as a 'one-off' event. Accessible and continuing technical support to schools and districts is essential to sustain, scale-out, and to advance change.

This study adds value to previous research in this domain by identifying and clarifying those factors that increase the likelihood of CPD achieving its intended outcomes in Indonesia, and the benefits arising from those outcomes being sustained and scaled out.

Executive Summary

Background

Indonesia has made impressive progress in achieving equitable access to schooling. Yet the nation's commitments to education are not advancing learning outcomes for children. Nor does the considerable assistance provided by external donors demonstrate clear evidence of sustained changes at the scale needed to improve the quality of education.

How can Indonesia become 'unstuck'[1] in achieving education quality goals? Indonesia has implemented national strategies in curriculum reform and teaching, educational finance, teacher employment, and school-based management. None have worked out quite as well as hoped to improve quality. Through the Australian program, INOVASI, a radically different approach to achieving quality goals and improving the sustainability and scale-out of benefits is being trialled with Indonesian partners.

Approach

INOVASI's strategy to improving learning outcomes for students in early grades is through problem-driven iterative adaptation (PDIA). Strategies begin with understanding local challenges, designing, implementing and testing contextually-relevant pilots to improve learning and teaching, and involves continuously working with local communities of practice. Common to these pilots is the continuing professional development (referred to as CPD throughout this report) of teachers, principals and supervisors in school cluster-based teachers' working groups.

This study explores whether INOVASI's approach works – and why – with a focus on the CPD of early-grade teachers through short courses in literacy, numeracy and supporting topics. The study further considers the sustainability and scale-out of benefits to local stakeholders.

The study combines an analysis of the literature, provides data from the field, and studies cases of achieving sustainable benefits at scale from CPD. The case studies are from schools in Pasuruan and Sidoarjo in the INOVASI partner province of East Java. The study is structured in three parts. Part I explains the background and methodology. Part II presents CPD as an element of the larger domain of educational development and teachers' work. Part III analyses sustainability and the scale-out of benefits. INOVASI's theory of change is tested against conclusions in the published literature, the data available from INOVASI's monitoring, evaluation and research, and the two case studies.

Findings

The literature shows how CPD can work or not work. When combined with field data and case study results, the emerging evidence shows that INOVASI's strategic approaches are working for districts, schools, and students. Why the approaches are working can be answered by noting the alignment between INOVASI's strategic approach with the emerging consensus around findings in the research literature. The findings emphasise the importance of the implementation of CPD in continuous cycles of learning and classroom practice; teacher-

[1] The term 'unstuck' is borrowed from the book by Andrews, Pritchett, and Woolcock (2017) *Building State Capability*, a book that also explains the PDIA approach used in INOVASI's work.

learning in communities of professional practice; educational leadership; focusing CPD on children's learning; and by responding to children's needs. CPD pilots are implemented through a long-standing Indonesian facility for CPD, the teachers' working group or *kelompok kerja guru* (KKG). This implementation arrangement is working, but not optimally. Evidence points to the need for strengthening this arrangement.

For whom is the program working? It is working for teachers, students and the program as a whole. Teachers are learning from the CPD provided in literacy, numeracy and related topics designed to assist in more effective and equitable practices, and in changing mindsets. The data we have from classrooms is consistently positive that changes in student learning are occurring, and that changes reflect the impact of INOVASI's pilots. Finally, INOVASI and its local partners are learning about what works and why, concurrently with implementation. Learning from early pilots, such as *Guru BAIK*, has informed subsequent developments in strategy.

Part III of the report addresses questions about sustainability and scale-out. Two questions are asked: 'Is there evidence to show which approaches are *likely* to sustain – and why, and 'Is there evidence to show which approaches have *actually* been sustained – and why?' An analysis of the literature, INOVASI documents, field data, and the results of two case study districts in East Java provide answers to these questions.

The analysis confirms that INOVASI's approaches are likely to lead to the sustainability and scale-out of benefits from the pilots. This conclusion is informed by testing INOVASI's approaches in context against a set of educational, management, sustainability and scale-out indicators. Re-testing data against a set of unsustainability indicators validates the conclusion of the likely sustainability of benefits. The conclusion of likely sustainability is not only informed by the evidence from these indicators, but also the evidence that INOVASI's CPD practices have met specific 'threshold criteria'. If minimal threshold criteria for the design and implementation of pilots are not met, it is unlikely that benefits from pilots will be sustained and scaled-out.

Sustainability and scale-out are being achieved from the 'bottom-up' initiatives by teachers and facilitators, initially working within schools, but subsequently supporting scale-out at more substantial levels including the teachers' working groups, sub-districts, and districts as a whole. This finding shows that such bottom-up, local, initiatives by teachers are running ahead of the theory of change expectation that districts would provide administrative leadership on scale-out. The finding suggests that supporting this bottom-up phenomenon may be a constructive and additional strategy for consideration.

A second case study assists in answering the question: 'Is there evidence to show which approaches have actually been sustained – and why?' The evidence is that there has been actual sustainability of benefits from past development project activities, primarily in teaching and learning, but also in school-based management. These benefits reinforce INOVASI's work in East Java. Why benefits have sustained is the outcome of complex interactions among factors and cannot be attributed to one factor alone. These factors include: the relevance of the learning and teaching approaches adopted for teachers' day-to-day work; the increased motivation to teach that is derived from teachers seeing students' results improve; educational leadership provided by principals and supervisors; and a strong sense of local ownership and responsibility for change. District governments' policies and regulations, and their provision of financial support, further reflect local ownership.

The power of networking and the long experience and benefits from past donor support reflect the distinctive culture of the case study districts. Networking occurs formally through the teachers' working groups and internal school networks and informally through friendship groups and social media. The impact of the cumulative changes from earlier donor and government support for educational development is apparent.

A recurring finding throughout the study is the need to identify, address, and mitigate risks to successful outcomes. For teachers it is risks presented by the characteristics of their working environment; for CPD it is ensuring the highest standards in CPD, including the transfer of learning to the classroom and follow-up; for sustainability and scale-out it is ensuring that 'threshold conditions' (such as implementing high-quality CPD) are met. To express this finding simply – it is essential to clean-up the environment and remove obstacles to enable strategies to succeed. It is also essential to 'develop the educational developers'. Unless the environment is cleaned-up, and minimal thresholds for satisfying and productive learning and teaching are achieved, the effectiveness of all that is intended is compromised, and the risks of failure increased.

Conclusion

The study adds value to previous research in this domain by identifying and clarifying those factors that increase the likelihood of CPD achieving its intended outcomes, and the benefits arising from those outcomes being sustained and scaled out.

The case studies of likely sustainability and actual sustainability provide deeper insights into how the processes of sustainability, dissemination and scale-out have operated in an Indonesian context. The studies demonstrate the face-validity of a set of sustainability and scale-out indicators developed specifically for this study. A limitation of the case studies, however, is that the detail derives from contexts located in just one cultural setting. This means further work is essential to develop an understanding of the impact of the different cultural contexts where INOVASI is also working.

INOVASI's approach to CPD, sustainability and scale-out is consistent with the findings and recommendations of studies published in the international literature. Used as a benchmark, these studies indicate no obvious shortcomings in either INOVASI's design or implementation. This outcome is reflected in the success of the work being undertaken in districts and schools. There is good evidence that INOVASI and its Indonesian partners are working at the cutting-edge of sound, educational development practice in school reform to achieve improved learning outcomes for children.

School improvement must be managed on a continuing basis, as sustained school improvement is not a 'one-off' event linked to the life of one program. Schools and districts need continuing access to technical support to sustain and advance change.

The success of INOVASI's work in CPD, sustainability and scale-out is due to its alignment with national and local government policies and needs, the identified needs of teachers and schools, and at a more abstract level, its alignment with the international and local evidence for educational change. Moreover, INOVASI's work is informed by the substantial body of evidence from earlier educational development work in Indonesia and is supported by the continuity of experienced professional staff. The findings of the study provide further insights and confirmation that the principles of PDIA have practical relevance in helping Indonesian education to become 'unstuck' in its progress towards achieving quality outcomes at scale.

The findings also explain what works and why in CPD and in sustaining and scaling-out its benefits.

Recommendations

These recommendations are made in the knowledge that technical recommendations risk failure because of their limited capacity to recognise prevailing contextual issues such as finance, politics, and culture. Recommendations risk being de-contextualised, one-size-fits-all solutions, something INOVASI is actively seeking to avoid in the program. The risk is greatest when direct recommendations are made to governments. Moreover, this study is not alone in making recommendations; some from other INOVASI studies and some from other projects may be mutually reinforcing and some may be contradictory. Such potential confusion must be moderated by INOVASI before being presented to government.

Five recommendations are made for INOVASI's initial consideration and action. Accordingly, the principal recommendation to INOVASI is to:

1. Propose to partner governments the establishment a small professional working-group between the Governments of Indonesia and Australia, and INOVASI, to undertake a systematic review of the findings and recommendations made in this study, the recent INOVASI study of innovations in East Java (Arlianti and Shaeffer 2019), the study on teachers' working groups (INOVASI 2019a) and previous technical studies on CPD and sustainability in Indonesia by INOVASI and other development program partners.

   The outcome of the review should focus on an achievable, technically informed, and socially sound, costed, and politically acceptable set of action strategies to achieve sustainable and scalable improvements in student learning outcomes and student experience of schooling.

   Teachers and students are central in improving learning outcomes. The second recommendation to INOVASI addresses major gaps in knowledge about teacher development and student learning. The recommendation reinforces findings already reported to the Department of Foreign Affairs and Trade (DFAT) by Reid, Kate; Kleinhenz in (2015) and the research by Hattie (2003, 2011).

2. Strengthen the evidence-base of:

   Teacher development interventions. Detailed descriptions of interventions designed to develop teachers are few, making confident assertions about characteristics of effective programs or linking development characteristics to outcomes is currently very difficult. The evident success of INOVASI's approach deserves to be documented in detail in a readily accessible form for the international development community.

   Student learning. The study notes 'the missing student' in educational development. There are significant gaps in our understanding of how Indonesian students experience schooling and how they learn. Without a better knowledge-base about students and what they bring to schooling, all other approaches to improving learning outcomes, including CPD, will always be incomplete.

   The case study evidence confirms earlier research on change processes in Indonesia that found evidence of successful and widespread initiative to scale-out and sustain changes

through bottom-up strategies. Accordingly, it is recommended that donors and government find ways to:

3. Develop policies and practices in educational development that enable and strengthen bottom-up strategies now evident in schools and districts to bring about change.

   A common experience for district and school beneficiaries when a program closes or moves on to support new districts is that the sustainability and scale-out of benefits slows, fades-out, or ceases. Evidence from Indonesia shows that this phenomenon can be addressed. This is achievable by ensuring that districts and schools have access to continuing technical advice.

4. Incorporate strategies to continue technical (but not financial) support to districts and schools in any INOVASI program extension (modelled on lessons learned from USAID PRIORITAS) and/or assist Government of Indonesia Ministries and agencies to develop and implement appropriate support strategies for those districts and schools currently in partnership with INOVASI.

   There are major gaps in knowledge about CPD, sustainability, and scaling in Indonesia. A 'wish-list' of topics would overwhelm existing resources. However, three modest proposals are presented here on significant issues.

   First, the aid literature discusses in volumes about what donors can do or should not do to make aid more effective. But little is discussed about the implications of beneficiaries' conceptions of development strategies and technical language and how differences might be overcome to make their learning more effective and sustainable. This is a potentially positive area for further research and analysis.

   Second, there is little discussion in the literature about the nature of CPD expertise, how CPD providers are selected, how they are prepared for their work, how they go about implementation, assist in the transfer of learning and mentoring, and how their efficacy is assessed. These topics need to be understood and become part of the discussion to test CPD-based theories of change.

   Third, how the technical challenges of sustainability and scaling are now being addressed locally is worthy of closer attention: understanding how teachers (and others) are disseminating 'bottom-up' in their schools and beyond; how to disseminate and achieve scale through the teachers' working groups and at district level deserve to be developed further into coherent, evidence-based strategies to strengthen an activity that is already occurring.

5. Establish a continuing research and development program to address gaps in knowledge about CPD, sustainability, and scaling in Indonesia to increase the quality of the evidence-base from which to develop policy and practice to accelerate progress towards improved learning outcomes for students.

PART I: INTRODUCTION

1. Overview

Chapter abstract

Summary:

This study brings together the emerging evidence about continuing professional development and reports on 'what does and does not work – and why' to achieve sustainable learning outcomes at scale. INOVASI works with Indonesian partners to identify challenges and collaboratively develops strategies to meet local needs. A theory of change, describing how and why desired educational changes are expected to happen, informs the INOVASI approach. The theory of change sets out steps in achieving accelerated progress towards the goal of improved learning outcomes for children.

Key concept:

A theory of change is defined as a description of how and why a desired educational change is expected to happen. It describes activities and how these activities lead to desired outcomes.

1.1. Purpose of the study

INOVASI, the Innovation for Indonesia's School Children program, is a partnership between the Australian Department of Foreign Affairs and Trade (DFAT) and the Indonesian Ministry of Education and Culture. The INOVASI program goal is to accelerate progress toward improved learning outcomes for children. INOVASI is implemented in primary schools in 17 districts in the four provinces of West Nusa Tenggara, East Nusa Tenggara, North Kalimantan and East Java.

The purposes of the study are to:

- bring together the emerging evidence about continuing professional development from INOVASI pilots, partnerships, and related activities, and report on 'what does and does not work – and why' to achieve sustainable learning outcomes in classrooms, schools, and districts;
- provide policy recommendations for the Indonesian and Australian governments.

INOVASI works with its partners to identify challenges and collaboratively adjusts strategies to meet local needs. The likelihood of implementation success and long-term, sustainable benefits at scale is anticipated from this approach which contrasts with traditional top-down approaches with the assumption that 'one size fits all'. Potential solutions are co-designed with partners and piloted in participating districts. Common to these pilots is the continuing professional development (CPD) of teachers, principals and supervisors in school cluster-based teacher working groups. These working groups are known in Indonesia as *kelompok kerja guru* (KKG) or the teachers' working group.

Case studies in partner districts in East Java are used to test INOVASI's theory of change and to understand the complexities of what works in achieving sustainable benefits at scale from CPD. The principles derived from the studies can assist in understanding the dynamics of sustainable change in other INOVASI districts and beyond.

1.2. Theory of change

A theory of change is a description of how and why a desired educational change is expected to happen. It describes the 'missing middle' between activities and how these lead to desired outcomes.

As displayed in INOVASI's theory of change (Figure 1), pilots are the heart of the INOVASI change approach. The theory of change sets out end of program outcomes expected to be achieved by 2023 and includes three intermediate outcomes, as follows:

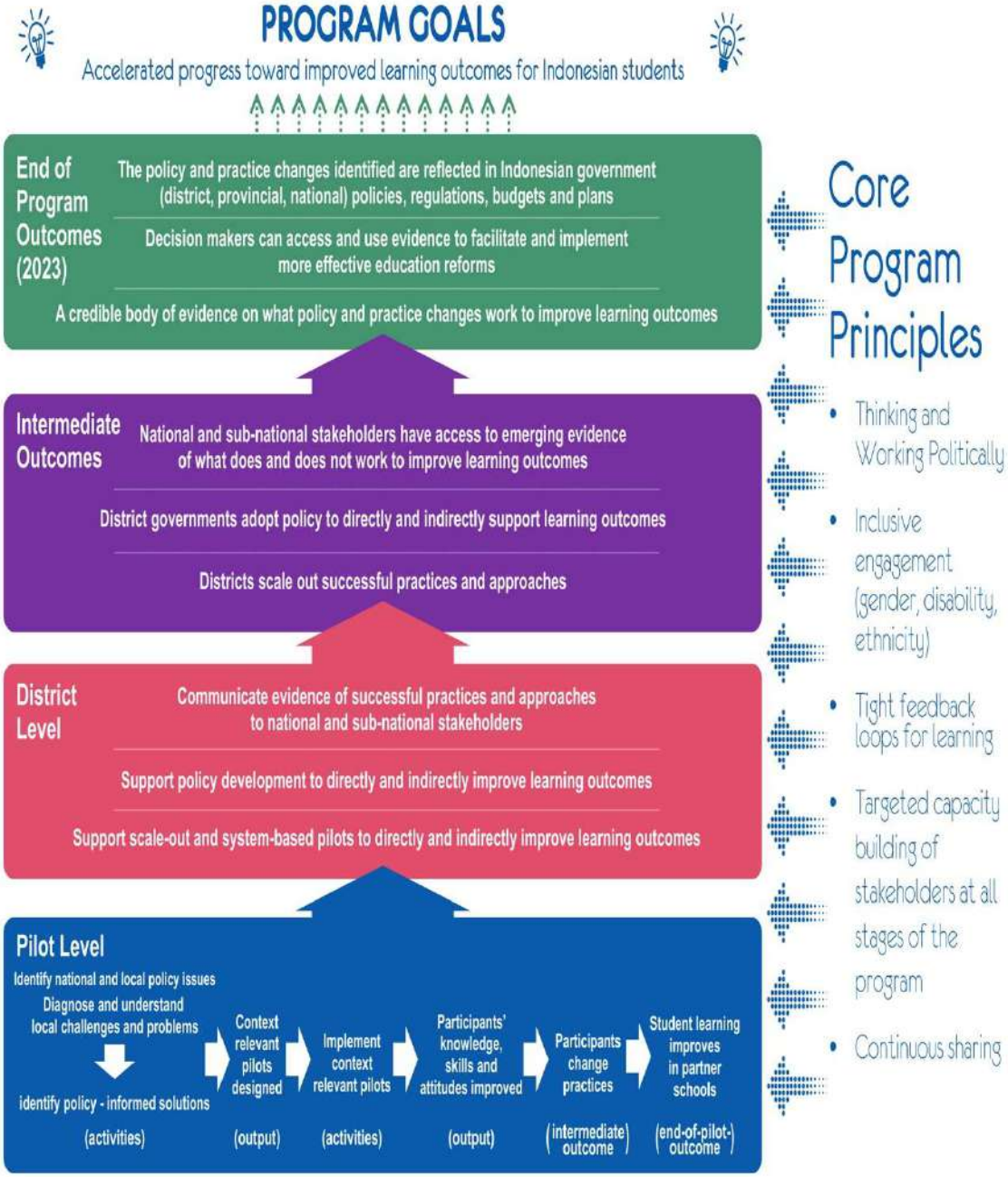
- districts scale-out successful practices and approaches;
- district governments adopt policies to support learning outcomes;
- national and sub-national stakeholders have access to emerging evidence of what does and does not work to improve student learning outcomes.

This study contributes to that emerging evidence.

The theory of change sets out a long chain of events from diagnosis to improved learning outcomes. However, the graphical representation should not deceive us into believing that it represents change as a linear, step-by-step, cause-and-effect, sequence. As convenient as this may be theoretically, change does not occur so simply. Change has several starting points, has highly interactive and complex components, and the change process is iterative. Iteration is an important characteristics identified in the research into effective CPD (Timperley et al. (2007). For example, case study findings reported in Chapter 10 are that scale-out is often initiated at the theory of change pilot level output, by-passes the formalities of the theory of change's district level, and re-appears as districts scale-out successful practices and approaches at the intermediate outcomes level.

The complexity of cultural, political and technical factors affecting educational development identified in this study shows that seeking simplistic cause-and-effect relationships can result in disappointment. In fact, as section 4.2.1 argues, educational development is an example of a 'wicked problem' – a problem that is extremely difficult or impossible to solve. Major challenges arise from a weak knowledge base, the massive number of teachers and facilitators involved, the burden of costs, the interconnections between development and politics, culture, conditions of teacher employment, and the diversity of children and schools. Collectively, these factors illustrate the complexity of this wicked problem, to which there are no simple solutions that INOVASI can confidently apply.

Figure 1: INOVASI's theory of change



2. Research and evaluation methodology

Chapter abstract

Summary:

An approach that blends elements of research and elements of evaluation is adopted in this study to provide answers to two key questions. The first question about CPD is: 'what works and does not work, why, and for whom, to improve learning outcomes? The second question concerning sustainability is: 'is there evidence to show which approaches are likely to sustain – and why?'

The approach draws on the international literature, Indonesian literature, program resources and data, and two case studies of sustainability in East Java. In seeking to find answers to questions of what works and why, it is essential to consider contextual matters to draw valid conclusions. Outcomes for teachers and learners depend on essential contextual preconditions of effective design and preparation of continuing professional development, its implementation and monitoring, to produce the required outcomes and sustainable benefits at scale.

Key concepts:

Research builds on existing knowledge and seeks truth to enlarge that body of knowledge. Evaluation seeks and uses knowledge to make judgements on questions of merit or worth of interest to stakeholders. The similarities and differences between evaluation and research are presented in Table 1.

2.1. Achieving understanding

To understand the emerging evidence of 'what does and does not work' requires analysis of research and experience in Indonesia and elsewhere and building on that analysis so that theory, research, and practice are more strongly connected.

The study has two complementary approaches to achieve this understanding. The first is assembling emerging evidence from INOVASI's experience, particularly from the two case study districts in East Java selected for this research. The case studies have a specific focus on sustainability and the scale-out of benefits from the implementation of INOVASI's pilots in literacy and numeracy. The second approach is an analysis of the Indonesian and international literature and the testing of INOVASI's theory of change against that analysis. The analysis is critical. INOVASI's work begins with the application of potential educational development solutions embedded in its theory of change. These solutions are known to work in a variety of contexts. They provide 'the raw material for reform' (Crouch and Destefano 2017, 2). This analytical work assists in testing the theory of change, guiding INOVASI's practices, and ultimately improving learning outcomes for Indonesian children.

2.1.1. The study: research or evaluation?

INOVASI's novel approach to educational development, based on the principle of adaptation, makes research and evaluation challenging. The challenge is the complex, responsive, and changing characteristics of INOVASI's work with beneficiaries. The challenge is explained as follows:

> INOVASI has adopted the principles of adaptive programming which means that throughout the implementation period we continually review and update our strategies, plans and approaches. This has implications for planning, evaluating and reporting on progress (INOVASI 2019e, 1).

Central to the challenge is the nature of research and evaluation. The purpose of research is to seek truth and to enlarge the body of scientific knowledge. Research in INOVASI's context is directed to the identification of the principles associated with successful educational development and change in Indonesia. Research builds on existing knowledge and tests the conformity of observations and conclusions with such principles.

The purposes of evaluation are different. Evaluation seeks knowledge to makes judgements on questions of merit or worth of interest to stakeholders. A goal of evaluation is to provide feedback to guide policy and practice. The questions specified for the thematic studies bring research and evaluation together: the 'emerging evidence' and reporting on what we have found about 'what does and does not work – and why' (knowledge and the pursuit of truth), and providing policy recommendations to government (questions of merit and worth).

Table 1 clarifies the characteristics and differences between evaluation and research (Levin-Rozalis and Gurion 2003, 5). The case study fieldwork in East Java illustrates these characteristics.

The dominant paradigm in research is to formulate knowledge as general principles applicable to many cases. Evaluation, however, seeks to acquire an understanding of concrete activities. Evaluation provides this understanding of the program as evidence of the validity of the theory of change. Consistent with INOVASI's principled approach of being sensitive to context, evaluation also studies the interaction between numerous contextual variables.

2.1.2. Why is this important?

This analysis of research and evaluation is important for two reasons. First, because it is neither helpful nor ethical to present something as research which it cannot be. The guidelines agreed on for this study are clear: what is required is a focus on the emerging evidence and on providing recommendations to government. This clear domain of application, combined with INOVASI's dynamic character, presents challenges to identifying causal variables in isolation from other variables that research normally demands.

Second, the analysis is important because it acknowledges the reality of INOVASI's dynamism arising from the project's flexibility, frequent budgetary variations, and from the adaptive strategy to adjust to complex contexts. Once that reality is understood, the futile pursuit of theoretically robust research designs that seek control of variables is abandoned in favour of approaches that seek to understand what is happening in specific contexts by using valid and reliable methods.

Table 1: Similarities and differences in evaluation and research[2]

Criteria	Research	Evaluation	East Java case study experience
Domain of application	Wide application of findings Aims to increase scientific knowledge.	Narrower application of findings focused on the program Aims to provide feedback.	Domain of application is to report on 'what does and does not work – and why'; to provide policy recommendations.
Theory	Theory-dependent: derived from, or producing theory.	Field-dependent: theory used to enlarge understanding of findings.	Field-dependent theory represented graphically in INOVASI's theory of change.
Methodology	Research and data collection methods derived from theory; researcher is active.	Evaluation and data collection methods derived from the field; evaluator is reactive.	One-off visits to dynamic school environments constrain the use of theory-derived methods. Contextual factors demand reactive observational/ethnographic approaches.
Generalisation	Attempt to formulate a general principle; external validity.	Attempt to understand a place, project, case, activity.	Case study method used focuses on explaining what works and why in a unique context.
Relevance	Primarily to increase scientific knowledge.	Primarily useful for producing practical knowledge for program partners.	Relevant case study knowledge can increase knowledge but not necessarily scientifically.
Causality	Stress is on a small number of causal variables in isolation from numerous other variables.	Artefacts found in enquiry are seen as internal variables to consider in understanding causality.	Seeking causal variables in absence of deep understanding of technical, political, cultural factors is unrealistic; reductionist research to identify a small number of variables is not valid.

2.2. Research and evaluation questions

The purpose of the study is to bring together the 'emerging evidence' about CPD implemented through teachers' working groups from INOVASI pilots, partnerships, and related activities, and report on 'what does and does not work – and why' to achieve sustainable learning outcomes in classrooms, schools, and districts. Table 2 shows the research and evaluation questions arising from the purpose of the study.

[2] Developed for INOVASI from the work of Levin-Rozalis and Gurion (2003).

Table 2: Research and evaluation questions

Theme: Continuing professional development		
Enquiry 1: Continuing professional development **'What works and does not work, why, and for whom, to improve learning outcomes?'**		**Enquiry 2: Sustainability** **'Is there evidence to show which approaches are likely to sustain – and why?'**
Key question 1	**Key question 2**	**Key question 3**
Primary research questions from study guidelines		
Does the cluster-based short-course training change teacher knowledge, beliefs, and practice? Does this improve learning outcomes? For whom?	How do contextual factors influence the effectiveness of teachers working groups and CPD? In regular schools and madrasah?	Is there evidence to show which approaches are likely to sustain – and why? Subsidiary questions: Is there evidence to show which approaches have sustained – and why?
Secondary research questions from INOVASI's theory of change		
Is CPD an 'informed solution' to local challenges and problems? Have context-relevant pilots been designed? Have context-relevant pilots been implemented? Do participants change practices?		Does INOVASI support scale-out and system-based pilots to directly and indirectly improve learning outcomes? Do districts scale-out successful practices and approaches?

These primary research questions are linked as shown in Figure 2.

Figure 2: Linking the research questions

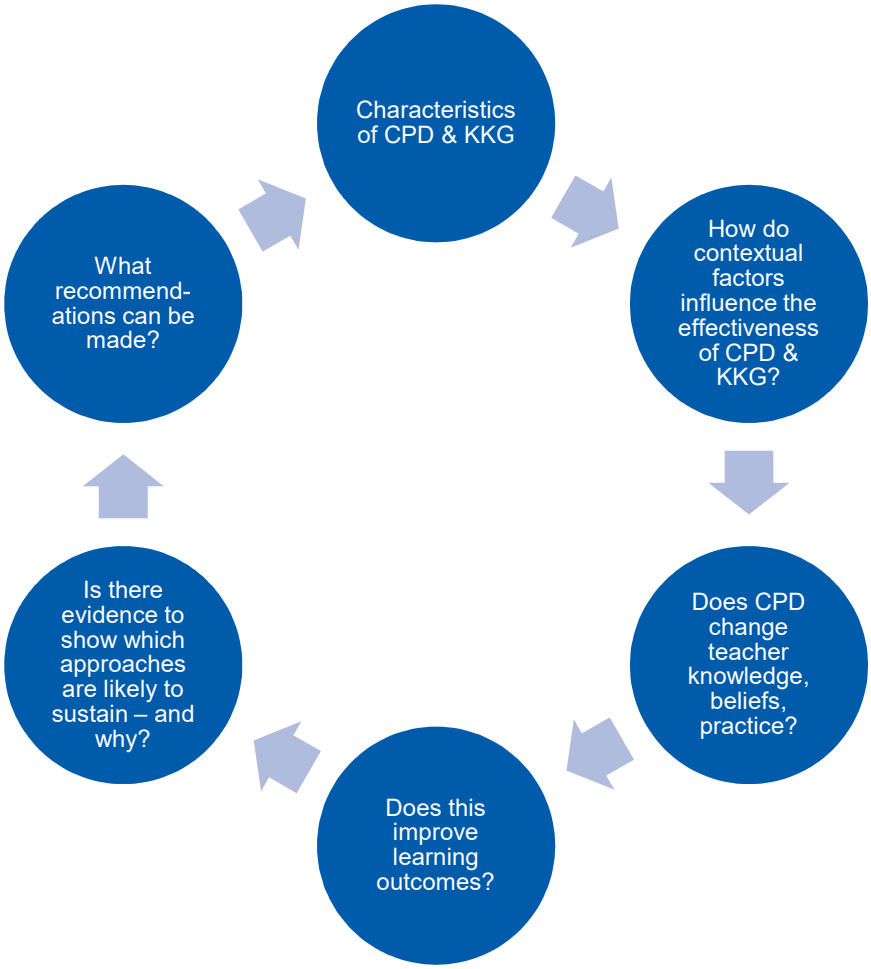


Figure notes:

- CPD: Continuing professional development
- KKG: Kelompok kerja guru (teachers' working group)

2.3. Evidence

'Evidence' is the evidence base of promising local solutions to support the development of policy and programs in districts and at the national level. 'Emerging evidence' means evidence that comes from the pilots. It also includes evidence from in-country and international research and the experience of activity implementation (Department of Foreign Affairs and Trade. Office of Development Effectiveness. 2019).

Guthrie (2004) has explained how educational enquiry to seek evidence in developing countries faces complex issues. The challenge is what constitutes evidence, when different groups in society have differing educational constructs, and where local knowledge may be some distance from Western standards of evidence. Guthrie asks '…how can we undertake research that is focused on the social constructs of participants, but which is rigorous, can be generalised from, and is therefore ethically safe for use by decision-makers?' (Guthrie 2004, 3). He proposes that the answer lies in the careful categorisation of data. He presents a

typology of educational knowledge to understand where different social perspectives come from and how they might influence us. Table 3 reproduces Guthrie's typology.

Table 3: Typology of educational knowledge[3]

Naïve Perception	Lay Attitude	Informed Opinion	Professional Opinion	Professional Judgement	Scientific Judgement
Knower lacks relevant educational experience or knowledge. Views based on non-professional criteria, e.g., non-schooled parent.	Knower has relevant educational experience but cannot relate views to formal knowledge, e.g., school pupil.	Knower has views based on relevant formal knowledge, but not educational knowledge, e.g., parent with science training.	Knower has formal educational knowledge. Expresses views as informal verbal opinions, e.g., teachers' staff room discussion.	Knower has formal educational knowledge. Puts views as formal written professional judgements, e.g., inspection report.	Knower bases formal scientific judgements on knowledge of educational theory and methodology, e.g., research report.

Knower has increasing educational knowledge →

Some examples of Guthrie's categories of evidence relevant to this study are:

- informed opinion: data from government officials, non-education expert donor staff and consultants such as management and governance specialists observing teaching;
- professional judgement: professionally qualified educationists and teachers observing teaching;
- scientific judgement: formally qualified educational researchers reporting on research data about teaching.

During the case study fieldwork, much of the evidence was presented as professional opinion by principals, teachers and supervisors. Professional judgement contributions to the study are the reports from evaluators and consultants cited in the study, and scientific judgements are from the published research studies about Indonesian education.

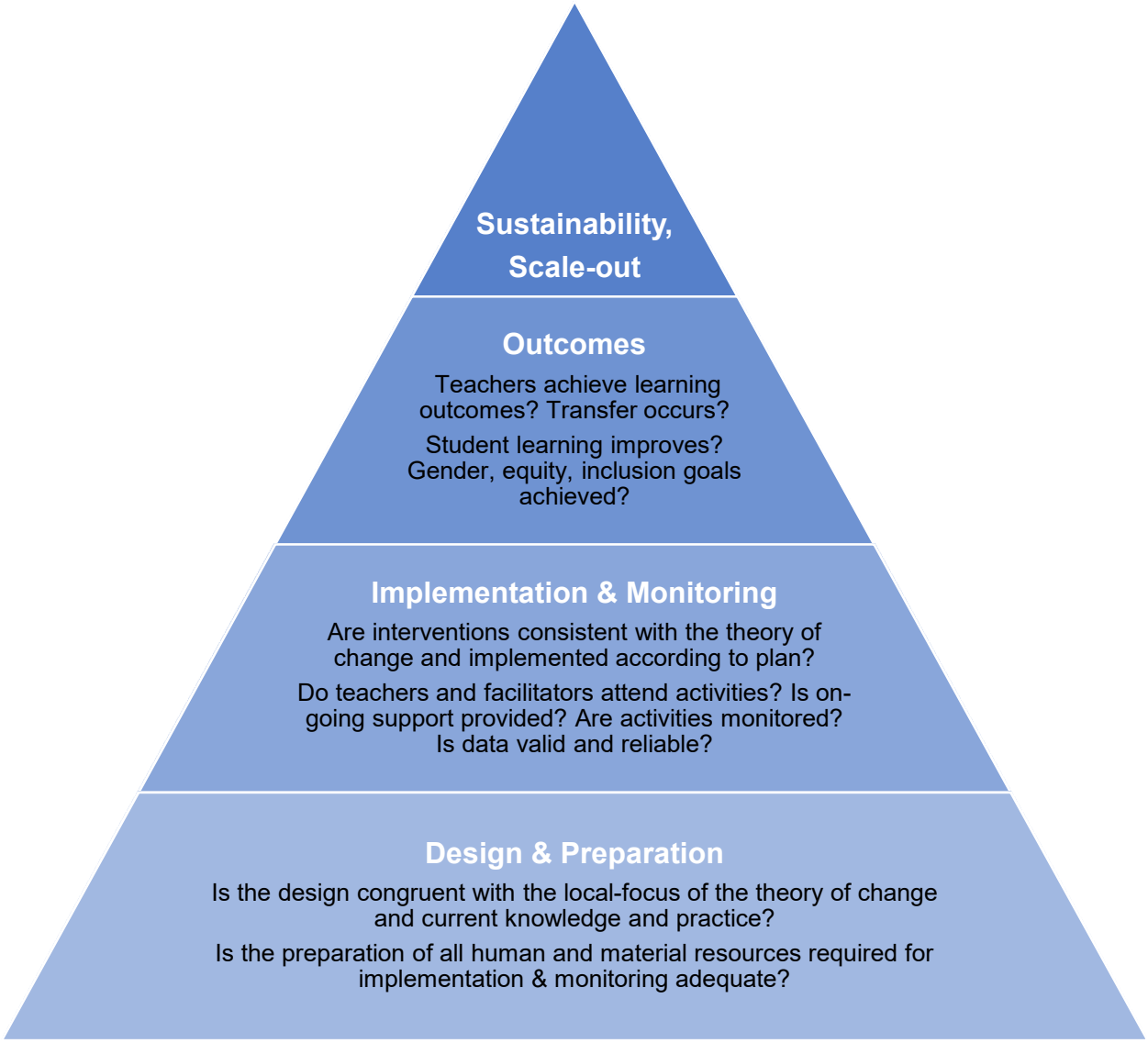
Most of the knowledge generated in educational development in Indonesia lies to the left of Guthrie's category of scientific judgement. Much of that knowledge is in the 'grey literature' – reports written by donors' officials and consultants – rather than in independent, peer-reviewed research that can claim to be scientific judgements. Apart from the long-standing information management practices of the World Bank and the Asian Development Bank (ADB), much of this valuable grey literature has been lost to the development community for research and is almost impossible to access.

[3] Source: Table 3 is reproduced from Guthrie 2004, 4.

2.3.1. Evidence of project design and implementation in achieving outcomes

In seeking to find answers to questions of what works and why, it is insufficient to inspect sets of outcomes data in isolation of contextual matters to draw conclusions. As the theory of change illustrates, and as summarised in Figure 3, there are design, preparation, implementation, and monitoring preconditions that must be addressed before answers to questions about what works and why in achieving sustainable scale-out can be provided.

Figure 3: Important project processes and activities



There is evaluative evidence (for example, Shaeffer (2013)) that shows the failure to achieve intended outcomes from an educational development activity is not necessarily the result of participants failing to learn what was offered. Instead, it is because an activity was not attended, was poorly designed, poorly implemented, or sometimes not implemented at all. The INOVASI Six-monthly report notes this kind of challenge to achieving good outcomes:

> In several cases across partner districts there was teacher absenteeism and a lack of attendance at KKG sessions. Some schools sent different teachers along to different (short course pilot) sessions, meaning that some teachers did not benefit from

> completing the modules in sequence or in full. This may have implications for final evaluation results… (INOVASI 2019e. 44).

Figure 3 illustrates how the outcomes for teachers and learners depend on essential preconditions of effective design and preparation, implementation (including participant attendance), and monitoring processes for them to produce the required outcomes to achieve sustainable benefits at scale. The literature of development frequently neglects the consideration of good quality educational design and implementation. Both are fundamental prerequisites for good outcomes and for sustainability and scale-out. INOVASI's approach in this respect, based on the principles of problem-driven iterative adaptation (PDIA)[4] is unusual and refreshingly professional.

2.3.2. Data

The quality of data reflecting processes and outcomes can be problematic in development projects. Evidence from INOVASI's *Six-monthly report* candidly illustrates data problems:

> Sampling and test administration have been a learning experience. Concerns arose during the first round over data quality, the capacity of enumerators varies across the provinces and this affects both the test administration and scoring (INOVASI 2019d, 46).
>
> To support quick feedback loops, MERL (Monitoring, Evaluation, Research and Learning, a sub-unit within INOVASI tasked with responsibilities in these four domains) has also been using teacher and facilitator reflections to gather responsive learning and data… A key challenge has been the quality of the reflective data… Their use has not been fully realised, and further capacity building of fasda is required… (INOVASI 2019e, 47).

Data quality issues present serious challenges to research and evaluation in obtaining valid and reliable information to provide convincing evidence of outcomes.

The data challenges for INOVASI are of at least five kinds. Each is distinctively complex and demands advanced capabilities that are often lacking in short-term, resource-constrained development projects. These challenges are:

- INOVASI's novel, adaptive development approach;
- the design of data collection;
- data collection processes and quality control;
- data management;
- data analysis and presentation.

This study relies less on quantitative data collected for INOVASI and more on an analytical approach of literature supplemented by case study fieldwork observations.

2.4. The literature review

The literature review explores issues to inform the analysis of the emerging evidence from INOVASI's pilots and partnerships. A concurrent outcome is that the review also identifies evidence-based good practice benchmarks from which to assess INOVASI's theory of change,

[4] Problem-driven iterative adaptation (PDIA) is explained in section 3.3.

its approach to CPD pilots, and to sustainability and scale-out that can guide future policy and practice. The works of Timperley et al. (2007), Timperley (2011) and Evans and Popova (2016) are examples of quality work suitable for such benchmarking.

The review searched published international and Indonesian literature, graduate theses, and the 'grey literature' – that is, the reports produced by donors and by Indonesian educational development projects, including project reports produced by INOVASI.

The review is neither exhaustive nor complete. The sheer volume of material being published daily means that it is impossible to monitor and analyse all this expanding body of literature on CPD, teaching and learning, sustainability, and related fields.

The literature review addresses three major and interrelated themes. One theme is CPD. The second theme is what has been achieved by CPD conducted in the cluster-based teachers' working groups. The third theme is about the scaling-out of change and the sustainability of benefits.

2.5. The case study approach

INOVASI presents two significant challenges to the researcher: its scale and its complexity. Scale is evident in INOVASI's implementation of approximately 50 unique pilot activities located in 17 districts in four culturally distinct provinces. Complexity is apparent in this scale, and in the different focus of the pilot interventions – literacy, numeracy, leadership, libraries, multi-grade teaching, inclusion and multi-lingual teaching, and in the designs of pilots. Each pilot is responsive in different ways to the context of each location. Finally, there is the complexity in comprehending the differences between INOVASI pilots, grantee pilots, and district pilots. These complexities refer only to the INOVASI side of the partnership. Then there are the complexities on the beneficiaries' side – the complexities of geographical location, culture, local politics, teaching and learning practices, and educational administration.

The qualities of scale and complexity present challenges to the researcher. Approaches to comprehend these complexities must be relevant, realistic and practical. One method with the potential to address these challenges is the multiple case study (Stake, 2006; Yin 2018). This approach to case selection, and data gathering is explained in more detail in Chapter 10.

PART II: EDUCATIONAL DEVELOPMENT

3. The domains of educational development

Chapter abstract

Summary:

INOVASI has been taking initiatives in educational development informed by the principles of problem-driven iterative adaptation (PDIA), complemented by the experience of many years of educational development practice in Indonesia. INOVASI's approach to educational development is well-supported from the accumulating evidence from both educational development research and from experience in Indonesia.

Key concepts:

Educational development supports organisations, and all of their members, to function effectively as learning and teaching communities. Improving students' learning, and students' educational experience, is the ultimate focus of educational development.

Educational development may include one or more of the following more specialised categories of development: continuing professional development, instructional development, organisational development, institutional development, and infrastructure development. Each of these distinctive categories of development are defined and explained in this Chapter.

3.1. Introduction

This Chapter explains the concept of educational development and the place of continuing professional development (CPD) for teachers and principals within that concept. INOVASI's approach to CPD is evaluated.

Educational development supports organisations and all of their members to function effectively as learning and teaching communities. It also seeks to develop educational institutions. Educational development focuses on improving the accessibility and quality of education provided for all students. Student learning and their educational experience is the ultimate focus of educational development. Today, successful educational development commonly includes attention to institutional and organisational development, as well as to CPD. The focus on ensuring equitable access to quality education, on teaching and improving student learning, occupies most attention in educational development.[5]

CPD is the central component of practice in the broader field of educational development. CPD, if implemented in isolation from the broader concept of educational development, is not likely to succeed in achieving lasting change and development (Cannon 2001; Timperley et al.

[5] Educational development has similar meanings in other contexts. For example, educational development is widely implemented in the higher education sector where it has a long history of supporting the improvement of education through a focus on learning and teaching and the supporting institutional and organisational arrangements. For a review of educational development strategies see the article by Gibbs (2013), 'Reflections on the Changing Nature of Educational Development'.

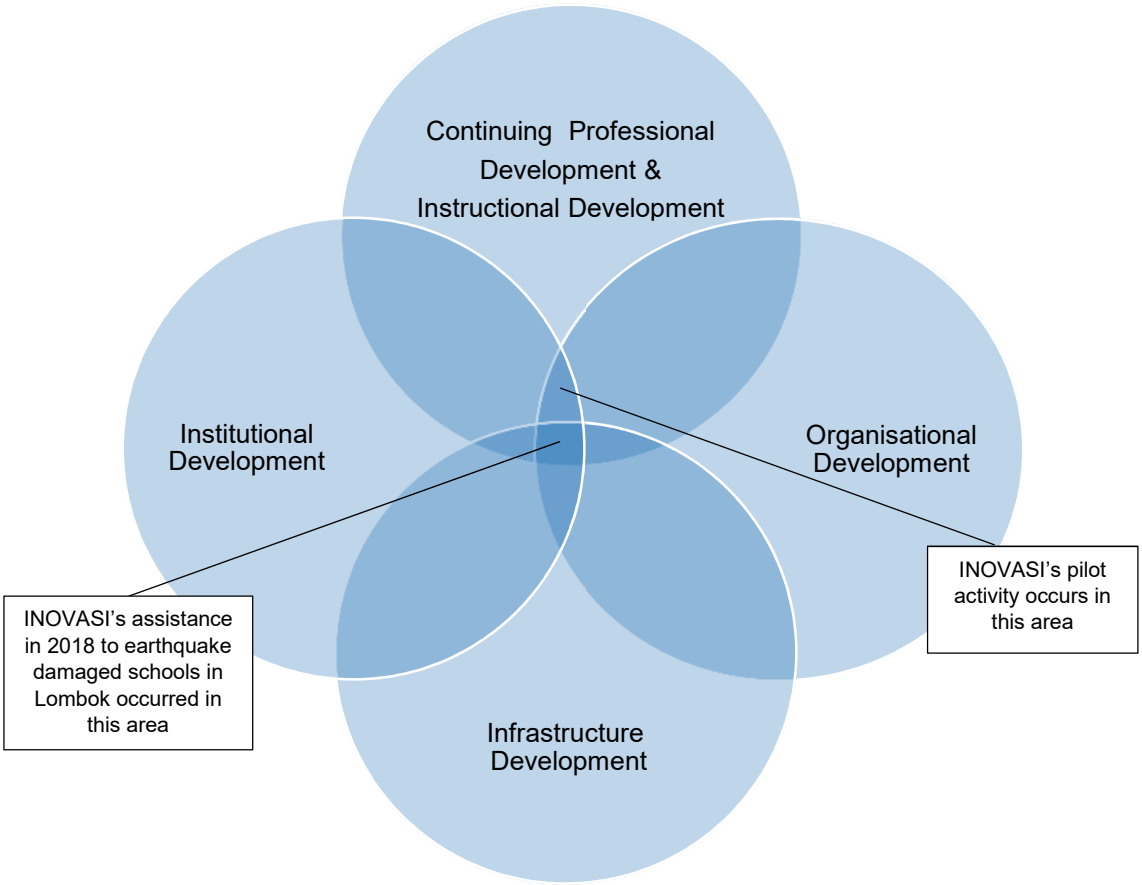
2007; Shaeffer 2013; Guthrie 2018). INOVASI, applies this understanding by addressing relevant cultural, political, and management issues.

INOVASI's formal reports, for example, the Six-monthly progress reports (INOVASI 2019g, 2020), demonstrate that INOVASI is actively engaged in educational development. INOVASI's theory of change presents a clear framework for the implementation of educational development. CPD, implemented in pilots, seeks to develop participants' knowledge, skills and attitudes to improve their professional practices. Educational organisations are also strengthened through their collaborative participation in diagnosing needs and challenges, in policy development, and implementation. The national institution of education as a whole is strengthened through the scale-out of successful practices and improved knowledge of change and development.

CPD is one of several domains of educational development, as illustrated in Figure 4. The other three domains in Indonesian education are organisational development, institutional development, and infrastructure development. Instructional development, discussed below, is a sub-set of CPD.

The little evidence we have about the sustainability of educational development assistance to Indonesia shows that a focus on one of these domains alone is unlikely to lead to sustainable change (Cannon and Arlianti 2008). Some education projects began with a single emphasis such as with organisational development, for example, USAID's Managing Basic Education Project (2003-2006) and the ADB Decentralized Basic Education Project (2002-2012). Strong internal demand emerged in both projects to push them to support the professional development of teachers and principals. This suggests, as the case studies in East Java also show, that there is latent demand for CPD in schools. INOVASI has avoided that single-focus error, as shown below in Figure 4.

Figure 4: Domains of educational development



3.2. Continuing professional development

Continuing professional development (CPD) refers to work-related learning and development that continues throughout a career. For education, Padwad and Dixit (2011, 7), define CPD as follows:

> CPD is a planned, continuous, and lifelong process whereby teachers develop their personal and professional qualities, and to improve their knowledge, skills and practice, leading to their empowerment, the improvement of their agency and the development of their organizations and their pupils.

To emphasise, the focus is on the development of personal as well as professional qualities, empowerment, and agency. It is development in breadth as well as in depth. CPD has evolved from the intellectual traditions of human development, particularly from psychology, and more recently, sociology. CPD now involves groups of teachers and educational administrators working together to learn how to address local and school-based challenges. In Indonesia, this learning takes place in teachers' working groups, known locally as *kelompok kerja guru*, abbreviated in this Chapter as KKG.

The term CPD is used here to include those activities also described as training, staff development, human resource development, in-service education (or INSET when training is added), capacity development, and *continuous* (rather than continuing) professional

development. The significant distinction between continuing and continuous development is explored in section 4.1.

3.2.1. Instructional development

Instructional development is a sub-domain of CPD, with foundations in curriculum, teaching and learning, assessment, and educational technology.

What distinguishes instructional development from CPD is that it does not meet the criteria set out in the Padwad and Dixit definition (2011, 7) of being a continuous process, nor does it address the development of both personal and professional qualities. Instead, instructional development provides narrower technical support for the development of teachers' skills and knowledge in specific teaching methods, technologies, materials, and assessment methods intended to improve learning outcomes. The evidence we have of the limited educational activities carried out in teachers' working groups, suggests that much of what is done there is instructional development. This includes the development of test items, teaching materials, and aids (Chang et al. 2014; Sopantini 2014; INOVASI 2017).

Reports from donor-funded education projects in Indonesia show that much of the development provided for teachers has been in instructional development, rather than professional development (Cannon 2017).

There are two reasons why it is important to recognise this past focus.

First, much past development in Indonesian education has focused on short-term, one-shot, and disaggregated approaches to change, for example, learning about a particular teaching method, a mandated curriculum change, or a school management procedure. This quality of instructional development, often described as 'training', may have unintentionally contributed to poorer outcomes from development investments over the longer term (Cannon and Hore 1997). The observations in some post-project evaluations that development has plateaued or faded, is another phenomenon with potentially serious implications for sustainability (The Mitchell Group 2007; Evans 2012). These two concepts are discussed further in section 9.5.

Second, recognising that much past development has focused on instructional development draws attention to the contrast with INOVASI's approach. INOVASI's approach is based on the ideas of the development of multiple capacities: personal development, described as changing mindsets; professional (teaching numeracy or literacy), and empowering teachers and principals to work continuously to improve the development of their schools.

It is important to be alert to a significant finding reported on the related concept of capacity building. Fanany, Fanany, and Kenny (2011) show that Indonesians often see the outcome of capacity building activities as a personal benefit rather than something that accrues to either to the organisation for which they work or to the broader institution of national education.

This finding reveals a gap in educational development that warrants further consideration. The aid literature discusses in volumes about what donors can do or should not do to make aid more effective. But little is said about the implications of beneficiaries' conceptions and how differences can be overcome to make their learning more effective and sustainable. This indicates a potentially positive area for further analysis in INOVASI's work.

3.3. Organisational development and institutional development

Organisational development is a planned strategy to increase an organisation's effectiveness and efficiency, and to assist the organisation to achieve its purposes and goals. For INOVASI, the most common focus for organisational development is with local government organisations and schools.

Institutional development assists in developing conventional practices, laws, policies, systems, and formal structures of social interaction, that govern individuals and organisations and that ultimately shape the character of education and educational development.

Organisational development and its close relation institutional development are difficult to disentangle. They are frequently, and incorrectly, used interchangeably. This is partly because both have intellectual roots in the disciplines of economics, law, management, politics, and social psychology. Relatively recently, both have been influenced by anthropology as illustrated by the landmark study of school life in East Java by Christopher Bjork (Bjork 2004).

CPD is dependent on concurrent organisational development and institutional development to succeed. In their study of organisational development for the *Knowledge Sector Initiative*, a joint program between the governments of Indonesia and Australia, Mackenzie and Gordon (2016, 1) expressed concurrent development this way:

> There is increasing recognition that it is, in fact, the network of relationships, and the collaboration between organisations and individuals operating in their social, political, cultural, and economic contexts, often referred to as 'institutions', that generate real change. This means recognising that organisational development needs to include work at both the higher 'institutional' and lower 'personal' (CPD) level to be effective.

Enthusiastic teachers may attend the highest quality CPD program with significant learning and behavioural outcomes. Yet that learning may be lost if they return to poorly supervised schools where quality teaching and learning outcomes are not valued. A recent synthesis of research in developing countries shows that when rejection of educational change occurs, it may not be due to individual laziness or incompetence, but to the deeper reality that the nature of the CPD was inconsistent with local cultural norms embedded in society and its organisations and institutions (Guthrie 2018). This cultural challenge has been specifically noted in Indonesian studies (Sopantini 2014; The World Bank 2015) and is a key focus considered in INOVASI's scale-out strategy (INOVASI 2019e). Culture is addressed by INOVASI through its collaborative diagnostic work at the district level and in the co-design of pilots.

There is a complicating conceptual issue here, illustrated by the terms 'organisation' and 'institution' often being used synonymously and incorrectly. Advancing the practice of development requires that a clear distinction be made between these concepts. One is the real, observable form of an organisation, for example, a school, district education office, or a teacher's working group. The 'fuzzier', or perhaps ambiguous concept of an institution refers to the education system as a whole and to national laws and regulations governing education. A school is an organisation, education is an institution. Similarly, a court is an organisation and the law is an institution.

Formal institutions govern the behaviour of individuals and organisations within society. Institutions do this by mediating laws, regulations, cultural values, and conventions that shape organisational and individual behaviour. Guthrie (2018) shows that the neglect of understanding these institutional factors seriously inhibits educational change in developing

countries. Unless clear distinctions are made, development loses focus and its potential impact on sustainable change is reduced.

This institutional factor has been carefully considered in the work of INOVASI. This is illustrated by INOVASI's strategic application of the principles of problem-driven iterative adaptation (PDIA).[6] INOVASI reflects this consideration by working with local stakeholders to identify challenges to the collaborative implementation of national and local education policies for the achievement of better learning outcomes (INOVASI 2019b).

The idea of institutionalisation is sometimes presented as the third and final phase of change processes. Those phases are described as mobilisation, implementation and institutionalisation. In that sense, institutionalisation has a similar meaning to the idea of the sustainability of benefits:

> …a phase after initial implementation, when an innovation either got 'built-in' to ongoing use and organizational structures, or was discontinued due to such factors as the loss of funding, staff turnover, competing practices, and low administrator or teacher commitment (Anderson, S., & Stiegelbauer 1994, 280).

The three-phases thinking, where the language used implies institutionalisation is a separate phase and a responsibility of partners – the beneficiaries – has very likely contributed to the evidence of poor sustainability outcomes. INOVASI has avoided this error in thinking. Institutionalisation is integrated into the theory of change from the beginning, with diagnosis and co-design based on national and local policy issues, and is further reflected in the theory's district level activities, intermediate outcomes and as end of program outcomes (Figure 1).

3.4. Infrastructure development

A review of past educational development projects implemented in Indonesia reveals a focus in many projects on infrastructure development. This occurs in the design and construction of schools, improvements to school grounds, and in the structural repair of classrooms. This emphasis has often had poor outcomes, particularly in the sustainability of benefits from these capital investments (Cannon and Arlianti 2008).

Infrastructure is important in achieving desirable educational outcomes. Comprising buildings, grounds and classrooms, infrastructure is not a neutral given in education. There is a complex relationship between the physical environment and individual behaviour, and for the opportunities that environment yields for learning and teaching activities to take place. Engineers and architects contribute to the design of spaces for learning, ideally in collaboration with educators, to improve learning outcomes for students (Ariani and Mirdad 2015; Barrett et al. 2015). In addition, for example in the case the *Educational Partnership with Indonesia* (2011-2017), these disciplines have made further useful contributions through improved management systems for school construction and maintenance (*Education Partnership – Independent Completion Report* 2016).

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[6] The architects of PDIA describe the process as follows: 'Rather than "selling solutions" (or a "tool kit" of universal "best practices" as verified by "rigorous evidence") we propose strategies that begin with generating locally nominated and prioritized problems, and work iteratively to identify customized "best fit" responses … in the process working with an expanding community of practice to share and learn at scale. We call this approach problem-driven iterative adaptation (PDIA)' (Andrews, Pritchett, and Woolcock 2017, 5).

For INOVASI this has not been a central focus of its educational development strategy except in the case of relief work to address the destruction of school assets arising from the 2018 earthquakes in North Lombok.[7]

3.5. Synthesis

The better examples of professional practice in educational development in Indonesia have been a synthesis of several intellectual traditions. Some donor-supported projects in education have tended to emphasise one tradition more than others, but often with less success. However, in the case of INOVASI, there is a constructive and common-sense balance between the domains of development, that is, the CPD/instructional development domain and the organisational/institutional development domain.

Balance is important, if not essential. INOVASI has been taking initiatives in developing professional practice, informed by the principles of PDIA complemented by the experience of many years of educational development in Indonesia. INOVASI's approach is well-supported from the accumulating evidence from both development experience and international research in education. INOVASI's approach stands in marked contrast to many earlier educational development approaches in Indonesia. Many of these earlier approaches were informed by distinctly different disciplinary assumptions: the management model that addressed governance and management deficiencies, the medical model of treating the 'sick patient' (education) – commonly with one-shot 'treatments', and the engineering model of building more schools and infrastructure (Cannon and Arlianti 2008).

[7] A description of this relief work is available here: https://www.inovasi.or.id/en/story/inovasi-hands-over-child-friendly-bamboo-schools-to-north-lombok-district/

4. Continuing professional development: effectiveness and challenges

Chapter abstract

Summary:

Continuing professional development (CPD) is the central component of professional practice in the broader field of educational development. The vast literature on CPD does not yet provide conclusive evidence on what works and why. It is difficult to attribute the effects of CPD on student learning outcomes to specific initiatives, programs and interventions. Short-term program impacts do not guarantee that the intervention will work at scale, or that results will be sustained. There is, however, consensus emerging about what constitutes effective CPD for teachers: a focus on classrooms and student learning; teacher learning of content and teaching approaches that involves understanding relevant theory and the implications of this for practice; extended opportunities to learn; assisting teachers to transfer and integrate new learning into practice; iterations of teacher learning with time for teachers to engage with new ideas and practices; and participation in a professional learning community such as teachers' working groups, the *kelompok kerja guru* (KKG).

INOVASI faces complex challenges in implementing CPD. Challenges, and ways of addressing them, are considered: CPD as professional preparation for poorly trained teachers; the problems arising from the unfortunately prevalent habit of 'deficit thinking'; cascade approaches to CPD; and the risks to learning of an accountability/surveillance culture emerging in CPD.

Key concept:

Continuing professional development is defined as work-related learning and personal development that continues throughout a person's professional career.

4.1. CPD and INOVASI's design of development interventions

4.1.1. CPD and educational change

Continuing professional development (CPD) is commonly seen as a solution to meet specific needs in the teaching workforce. An assumption is that problems can be solved by focusing on the 'deficiencies' of teachers and principals, often politely expressed as 'their needs', but on the contrary, needs identified by others. Another assumption is that teachers and principals can learn something useful to apply in their schools from short-term engagement in CPD. The regularity with which CPD workshops and seminars are conducted illustrate this assumption. Teachers are not universally happy with assumptions like these made on their behalf. The following quotation describes how many teachers think about CPD:

> For far too many teachers, staff development is a demeaning, mind-numbing experience as they passively 'sit-and-get.' … staff development is often mandatory and evaluated by 'happiness scales'. As one observer put it, 'I hope I die during an in-service session because the transition between life and death would be so subtle'. (Timperley and Alton-Lee 2008, 247).

The shortcomings of this 'sit-and-get' approach to CPD have been reported in Indonesian educational development generally (Cannon and Hore 1997; Cannon 2001) and more recently concerning a large-scale training program in school-based management (Shaeffer 2013). These studies show the need for more comprehensive thinking about CPD of the kind described by Timperley et al. (2007) and the need to address the negativity associated with much CPD.

CPD for teachers is a field of research and practice presenting huge challenges for INOVASI. Possibly one of the most significant of these challenges is that teacher quality has not been the main focus of educational development. The focus is shifting, but improving teacher quality had been a smaller part of educational development up to 2015 when a review of approaches to improving teacher quality in developing countries was prepared for DFAT by Reid and Kleinhenz (2015). They list limitations found in the research literature:

- The literature generally focuses on educational difficulties and not teacher quality.
- Little evidence of teacher development interventions is provided: detailed descriptions of interventions designed to develop teachers are few and making confident assertions about characteristics of effective interventions or linking development characteristics to outcomes is very difficult.
- Sources: most of the research is published in English and comes from the United States and the United Kingdom. A high proportion of developing country research focuses on sub-Saharan Africa.
- Rigour of evidence: analyses of teacher quality initiatives are less common in formally published papers and more common in the grey literature such as in theses and reports.
- Little evidence is presented for the effectiveness of teacher development interventions; it is difficult to attribute the effects of initiatives, programs and interventions on student learning outcomes.
- Short-term program impacts do not necessarily mean that the intervention works at scale, or that results are sustainable.

Learning from these findings, and from early field experiences, INOVASI's focus shifted during 2018 to a 'short-courses approach' to CPD implemented through teachers' working groups. This approach to CPD was technically and politically informed. Technically, to ensure that short courses were based on evidence of what works to increase teacher knowledge, and politically, as the short course pilots were adapted to the local political and social realities. The theory of change, shown in Figure 1, illustrates the approach. The lessons of PDIA were critical in that transition. Lessons included the need to expand the change space for teachers to adjust their practices, and the need to increase the authority, acceptance and ability for them to try something different to improve learning outcomes (INOVASI 2019b).

INOVASI's theory of change is consistent with the thinking and findings of one of the largest research studies of teacher practice in the world, conducted in Indonesia with grade eight mathematics teachers (The World Bank 2015). The findings support the general findings from the Western research literature such as those by Timperley et al. (2007). One example is that of all education system variables, teachers' knowledge has the strongest relationship with student learning outcomes. The World Bank study summarises how knowledge plays a role and how it is employed in the classroom: 'teachers having a bigger toolbox, as well as better tools' (The World Bank 2015, xxi).

Other key conclusions from this study include:

- There is a strong correlation between teacher subject and pedagogical knowledge and student learning, indicating that this knowledge is a critical element in teacher effectiveness.
- The most effective teachers tended to have a flexible and adaptable beliefs structure rather than falling into a single orientation.
- Teachers require continuing support if they are to change their practices. Results from a pilot indicate that providing continual support through CPD and practical applications in classrooms appear to be effective in changing teachers' beliefs, improving levels of teacher knowledge, and changing practices in the classroom (The World Bank 2015, 132).

4.1.2. CPD: continuous learning and capability development

Educational development practice and thinking is shifting away from short-term, one-shot, training approaches towards continuous, lifelong learning, particularly among communities of teacher-practitioners (Timperley et al. 2007a). This continuous, lifelong learning is a process in which teachers enhance their knowledge, skills, and attitudes but also their growth as professionals and as persons. Heyward, Cholifah, and Nuraini (2018, 132) expressed this idea in these words:

> In contemporary education systems, the idea of the teacher as a lifelong learner is seen as a key concept for both the individual and society. Continuous learning is seen as a way to meet the need for continually improving the competency and capability of professional teachers.

The idea of the teacher as a lifelong learner in the quotation requires essential distinctions to be made. One is the distinction between the terms continuous and continuing. The other distinction is between capacity and capability. The interchangeability of these terms makes life difficult for practitioners. Still, they are distinctions worth making if the quality of professional development for teachers is to improve and keep up with current thinking.

Continuing/continuous professional development: The word 'continuing' suggests 'intermittent' while continuous means 'taking place without a break'. While professional development cannot be truly continuous – teachers must eat and sleep and attend to family responsibilities – continuously learning from the act of teaching is a very constructive idea.

INOVASI is committed to working towards the notion of continuous professional development. It is where teachers are empowered to identify and solve learning and teaching challenges and by learning from observation, consultation with colleagues, and from data gathered in classrooms about their students' learning (INOVASI 2018b). The concept of *continuous* professional development means that it becomes a *routine* part of teachers' work. In this conception, we move away from CPD as an intermittent, optional add-on to teachers' work.

Not implementing improvement efforts continuously is a reason why even the most effective schools drop to average effectiveness (Creemers and Kyriakides, 2012). INOVASI's approach reflects a paradigm shift in thinking about teachers' CPD. It is the shift from the older view of one-shot, formally structured activities outside the classroom, to continuous development firmly embedded in the reality of teachers' professional work (Roesken-Winter, Hoyles, and Blömeke 2015). By way of contrast, an example of past thinking and CPD practice comes from the *Primary Education Quality Improvement Project* (1992 – 1997) where:

> (what) teachers learned while training sometimes seemed too remote from their daily practice. The aims of the training may have been unrealistic, considering actual practice in most classrooms (Van Der Werf et al. 2000, 353).

Capacity/capability development: These terms can be confusing as they are often used interchangeably. However, for INOVASI's work, it is helpful to attempt a distinction between them to achieve the breadth of outcomes in knowledge, skills, and mindsets sought through short-courses CPD.

Personal capacity development focuses on the development of knowledge and skills to undertake specific aspects of work. A common expectation is that personal capacities enhance organisational qualities in schools necessary to provide quality education for children.

We know from the work of Fanany, Fanany, and Kenny (2011) that Indonesians generally have a conception of capacity development as a personal benefit. Paradoxically, this narrow, personal, conception of capacity development is more aligned with the expansive idea of capability development which puts people at the heart of the process, not the organisation. The aim of capability development is to ensure that people are better informed and enabled to solve problems and better able to make choices about their work and their lives (Lambert, Vero, and Zimmermann 2012). The PDIA concept of adaptive expertise reflects the concept of capability. Capability is developed through CPD cycles of inquiry, where teachers learn to identify when routines do not work and to actively seek new information about alternative approaches (Timperley 2011; Andrews et al. 2015).

Nobel laureate and Indian economist and philosopher, Armartya Sen, laid the foundation for this expanded idea of capability development by drawing on Adam Smith's book, *The Wealth of Nations*. Sen draws contrasts between:

> '… the accumulation of human capital and the expansion of human capability. The former concentrates on the agency of human beings – through skill and knowledge as well as effort – in augmenting production possibilities. The latter focuses on the ability of human beings to lead lives they have reason to value and to enhance the substantive choices they have (Sen 1997).

INOVASI's approach to CPD, and the outcomes from participation in that CPD, illustrates the idea of capability. For example, moving beyond developing the capacity to teach differently, INOVASI also seeks to change mindsets about learning and teaching so that capabilities for expanded change and action are increased. Further, the outcomes of CPD pilots in the case study districts also illustrate clear evidence of a shift towards the idea of capability development.

One of the most encouraging capabilities is the evident commitment, motivation and initiative of many facilitators, teachers and principals to take it upon themselves to assist their colleagues by disseminating their understanding and skills to others. Or, as Sen would say, 'to lead (professional) lives, they have reason to value and to enhance the substantive choices they have' (Sen 1997). Teachers and facilitators in the East Java case studies (Chapter 10) demonstrate these substantive choices. They are also evident in the PRIORITAS study of sustainability and dissemination (Cannon, Arlianti, and Riu 2014).

4.1.3. The CPD focus on classrooms

INOVASI now includes a political and cultural perspective in CPD. The INOVASI *Scale-out strategy* describes this perspective as follows:

> Our approach … is (1) to work with local leaders and professional communities, to identify and co-design appropriate solutions to local problems, (2) to empower teachers to identify and solve their own practice-related challenges within the classroom, and (3) to build a growth mindset among participants and partners, creating a climate which encourages innovation rather than just compliance (INOVASI 2019a, 15).

This classroom focus reflects findings that classrooms are critical in determining how children perform at school (Muijs and Reynolds, 2001; Timperley and Alton-Lee 2008; Hattie 2009; Joseph 2019).

In a review which asks: 'How Does Professional Development Improve Teaching?' Kennedy sets out the complexity of this domain. The review notes the risk arising from the fundamental validity challenge to CPD where professional developers typically meet with teachers for CPD *outside* of teachers' classrooms to learn about teaching, yet they expect their work to alter teachers' behaviours *inside* the classroom. This risk is what Kennedy calls 'the problem of enactment'. Teachers may take up an idea in a workshop, yet continue enacting a different idea in their classroom, without being aware of the contradiction, and having no-one observe to point out that contradiction. INOVASI seeks the minimise risks of failure from this 'problem of enactment' through the CPD approach of providing mentoring (*pendampingan*) although facilitators are often not always qualified enough to provide this level of support to teachers, an issue considered further in Chapter 7.2.4. The case studies conducted in East Java show that schools are also moving towards addressing this risk by engaging in CPD at school level in the *KKG-Mini* (mini teachers' working group) where the opportunities for observation of teaching are increased.

4.1.4. CPD and short courses

INOVASI's approach to CPD is to use short course pilots implemented through teachers' working groups. This approach has evolved from organisational learning from INOVASI's earlier *Guru BAIK* pilot experiences. Short courses developed and implemented through the pilots integrate the skills of adapting learning materials to classroom needs, doing simple formative assessments, grouping children for cooperative learning and using differentiated instruction. These are fundamental in inclusive education. Diagnostic and formative assessment, positive discipline, disability inclusion, and gender-sensitive classroom management are skills woven throughout the content of the pilot. The goal is that teachers acquire the attitudes and skills underpinning learning for all while ensuring none in the class are excluded.

What this analysis demonstrates is that the INOVASI CPD short course approach is more evidence-based and politically informed than past approaches to educational development. These earlier approaches were less well-informed, based as they often were, on top-down, sit-and-get, and one-shot assumptions about professional development.

Consistent with the concept of continuous professional development, INOVASI seeks to monitor its theory of change strategies through regular organisational learning. An internal process known as strategy testing guides this learning. INOVASI's *Third strategy testing report* (INOVASI, 2018, 12) notes the following four key reorientations introduced from mid-year from field experience with pilots:

- providing for the development of teachers', facilitators', principals', and supervisors' knowledge of teaching early grades literacy and numeracy;
- ensuring that systemic 'root causes' of poor teaching are included in the pilots;

- including an agenda for strengthening the effectiveness of teachers' working groups as part of the pilots;
- linking evidence from the pilots to advocacy objectives for policy development;
- putting teachers' working groups at the forefront of policy and practice in scaling-out the new INOVASI pilots.

Organisational learning in INOVASI reflects past project experience in Indonesia. For example, the rationale for the pilot strategy in North Kalimantan is based on the USAID experience from two past projects.[8] Experience there shows that attempts to improve teacher quality not based on teachers' working groups were not sustained. Mechanisms used to develop teachers did not last when the schools were responsible for sustaining the change or if a cadre of teachers with advanced skills was trained only at the district level. The lesson is that providing ongoing teachers' development depends on the teachers' working group being a local resource of quality that teachers can use to improve their teaching.[9]

4.1.5. Summary

Is INOVASI's design of development interventions aligned with current knowledge and practice? The answer is yes.

The answer is based partly on the above analysis and partly on the synthesised evidence from the work of Timperley and others, summarised as follows:

- Teacher learning requires teachers to engage with new knowledge that involves theoretical understandings and the implications of these for practice, with a focus on the links between teaching and its impact on student learning.
- The overall professional learning environment needs extended opportunities to learn through a variety of activities to assist teachers in integrating new learning into their practice.
- Contextual conditions to promote the learning of content in depth include:
    - consistency with government policy and research;
    - iterations of teacher learning with time for teachers to engage with new ideas and their implications for practice;
    - experts external to the group who could present those ideas in ways that promote teacher engagement;
    - participation in a professional learning community (Timperley et al. 2007).

INOVASI's design of development interventions is also consistent with changing conceptions of professional development. Table 4 summarises these changes and links them to INOVASI's approach.

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[8] These projects are *Decentralized Basic Education* (DBE) from 2005-10 and *PRIORITAS* from 2012-2017.

[9] In the INOVASI partner district of Bulungan in North Kalimantan, the approach was comprehensive and went beyond building the quality of teachers' working groups. It began with local problem exploration and definition. Local solutions included: formative assessment and catch-up for slow readers in early grades; coordination between schools, village libraries and community reading centres; coordination with non-government organisations, the Provincial Quality Assurance Institute, and the university; book procurement policy and funding; and a big political push led by Bupati at district level and, at provincial level, by the Governor's wife (designated as *Bunda Baca* – mother of reading – like an ambassador for literacy).

4.2. CPD challenges for INOVASI

The design, implementation and monitoring of CPD present complex challenges to a development project. Key challenges for INOVASI are discussed below.

4.2.1. CPD – a 'wicked problem'

CPD is a 'wicked problem'. The term 'wicked' does not mean a moral issue in the sense of evil, but a highly complex problem resistant to developing shared understanding and shared approaches to addressing the challenges presented by that problem. A wicked problem is:

> …a social or cultural problem that is difficult or impossible to solve for as many as four reasons: incomplete or contradictory knowledge; the number of people and opinions involved; the large economic burden; and the interconnected nature of these problems with other problems'.[10]

In Indonesia the wicked problem challenges of CPD reflect these criteria: weak knowledge base about CPD; the massive number of teachers and facilitators involved; the burden of CPD costs; the interconnections between CPD, local culture and politics; the conditions of teacher employment; and the diversity of children and schools. Collectively, these factors illustrate the complexity of this wicked problem, to which there are no standard solutions. At the local level, more specific challenges and complexities emerge when the PDIA approach is implemented.

With our present knowledge, our expectations from CPD must be modest. Challenges such as those listed below should be addressed using the best available evidence:

- continuous house-keeping to 'clean-up' the context in which CDP is expected to achieve intended outcomes. Obstacles to effective teacher learning must be eliminated such as those linked to the 'hygiene factors' discussed section 8.2 and obstacles present in the operations of teachers' working groups discussed in Chapter 7;
- minimising risks to teacher-learning and potential fade-out (section 9.5) by ensuring local, high-quality educational leadership and facilitators, well-designed learning activities and materials, support for the transfer of learning to classrooms, and the provision of supportive feedback to enhance further teacher learning in cycles of learning-and-doing;
- recognising local realities, the diversity and educational level of participants, acting equitably and with common sense and consideration, and by modelling the highest standards of teaching espoused by the CPD provided.

4.2.2. CPD as professional preparation

One element of the wicked problem is that the implementation of CPD assumes a certain level of prior, professional knowledge upon which CPD can build. However, 'CPD' may be a misnomer. Many Indonesian teachers lack adequate pre-service professional preparation for their work. So, for these teachers, CPD is more like professional preparation than professional

[10] Source: https://www.wickedproblems.com

development. An approach known as structured pedagogy[11] may assist in addressing this specific need.

This challenge has implications for the design of CPD. Just as good teachers are aware that they must understand where students are in their learning development, so too must professional development facilitators understand where teachers are in their professional development. In a study in North Maluku, the level of understanding by school cluster management of teachers' working groups showed a tendency to oversimplify problems that arise and to weaken the prospects for achieving change (Sopantini 2014). The PDIA approach adopted by INOVASI is a means by which that understanding is established, thus reducing the risks from this challenge (Andrews, Pritchett, and Woolcock 2017).

4.2.3. CPD and deficit thinking

'Deficit thinking' is a term used in education to describe the tendency to focus on learners' weaknesses rather than learners' strengths (Scott and Armstrong 2018). The widespread concern about Indonesian students' apparent deficiencies revealed in international tests of literacy and numeracy illustrates this phenomenon.[12]

Programs focusing on deficiencies and their remediation have long-term adverse effects and achieve little (Zhao 2016). Deficit thinking plagues CPD in Indonesia. Many assumptions are made that teachers have deficits that must – and can – be fixed through CPD: cognitive – they do not know enough; ability – they cannot teach; and behavioural – they absent themselves from teaching far too often. Teacher-management strategies are often proposed solutions to deficits as well, including monetary incentives and accountability measures. Intended to pressure teachers to work differently, or reduce the incidence of absenteeism, such strategies, like those proposed for students, are found to be not as effective as hoped by their ill-informed advocates (Chang et al. 2014).

The persistence of the deficit thinking mindset in CPD is a concern because it ignores two significant factors.

First, it ignores the assets that teachers bring to CPD. One consequence of an unbalanced focus on deficits is to risk overwhelming those seeking change and leads to a sense of despair that anything can be achieved. The baseline report for North Kalimantan (INOVASI 2019, 8) illustrates this risk with its long list of deficits and minimal identification of local assets.

Second, deficit thinking risks ignoring the obstacles in the local context that have negative impacts on teaching and learning and that lead to deficits when, in fact, the 'deficits' are elsewhere. In other words, deficit thinking introduces the risk of ignoring the important management responsibility of addressing the deficits in teachers' working environments so that they are enabled to work effectively. This matter is clarified below in Chapter 8.

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[11] 'Structured pedagogy programs seek to address several barriers to learning. These barriers could be in the form of inadequately trained teachers, lack of appropriate materials, curricula and instructional approaches. Structured pedagogy programs usually combine the provision of both 'hardware' and 'software'. A central element of most interventions is the development of evidence-based curricula and instructional approaches, along with lesson plans and training for teachers in delivering new content and material for students.' Source: Snilstveit et al. 2016, 25.

[12] For example: 'Not even mediocre? Indonesian students score low in math, reading, science: PISA report.' *The Jakarta Post,* 4 December, 20

Timperley and Alton-Lee (2008, 348) note the poor outcomes from CPD informed by deficit thinking. Poor results may occur when outside experts develop recipes for teaching and then present prescribed practices to teachers. The evidence suggests that the impact on student outcomes is either short-lived or limited (Borman et al. (2005). The fundamental reason for this outcome is that experienced teachers do not come to CPD as 'empty vessels'. Instead, they come as people with assets – knowledge, skills, experience, life skills – as well as needs. Sopantini (2014, 96) expresses this point about teachers in Maluku in these words:

> … treat teachers as partners and stakeholders in the process, not objects; respect and nurture the intellectual and leadership capacity of teachers, principals, and others in the school community.

The data from a 2011 evaluation of training in school funding and management supported by AusAID is a revealing example of ignoring existing assets (Shaeffer 2013). The evaluation shows that the assumed 'deficits' requiring remediation were not as significant as first assumed. Evaluation data shows overall pre-test scores to be reasonably high (71%) and gains from training relatively modest (a gain of 12 points). Other data from the evaluation showing that 53% of participants felt they only got some, a little or no new knowledge, strengthens the reliability of this pre-test and gain score data.

In INOVASI's work, similar patterns of data may also demonstrate teachers' existing assets. Self-reported data of teaching practices used in class in Sumba Timur reveals that on each of eight of the eleven criteria evaluated, more than two-thirds of teachers reported using each of the eight practices (INOVASI 2019c, 9).

Nevertheless, sometimes the assumption of deficits can be justified. Well-intended, top-down deficit thinking is not always wrong. However, constructive ways of problem analysis have not been given the attention they deserve until now. PDIA offers a method for the development community to take a more balanced picture of assets and deficits and the educational context where these are found. One strength of PDIA is that it focuses on the concept of ability which is a potentially more positive way of approaching local challenges than looking for deficits alone.

4.2.4. Cascade approaches to CPD

Cascade training, also known as 'train the trainer' and the 'multiplier effect' is a model of CPD where a professional specialist trains a group of trainers in the material and also teaches them how to teach others. In turn, these trainees then train a larger group, who then train others. In this way, subject matter knowledge is cascaded down throughout the organisation so that large numbers of trainees are reached quickly and cost-effectively. There are many critics of cascade training. For example:

> It is as if at every level of the cascade there is a sieve and only a certain amount of what has been said sifts through so that by the time it reaches ground level – the classroom teacher – there is only a fraction of the original training (Bax 2010, 165).
>
> Experience of cascades in in-service development has tended to show, however, that the cascade is more often reduced to a trickle by the time it reaches the class-room teacher, on whom the success of curricular change depends (Hayes 2000, 135).

If these assessments of cascade training are correct, then the prospects for good outcomes from CPD using cascade approaches are bleak. An enduring challenge for CPD in Indonesia

is how to achieve development goals when the number of teachers is so high and their dispersal is so vast.

The evidence for the outcomes from cascade training is mixed. It is not the cascade model itself that is the main challenge, but how the model is managed. Prudent management of design, implementation, and monitoring have been standard features where positive outcomes are reported. Prudent management of a cascade is illustrated in AusAID's *Indonesia-Australia Program in Basic Education in East Java* – IAPBE. (Allaburton and Scheding 2007).

Indonesian experience demonstrates that achieving sustainable outcomes from CPD based on cascade approaches are unlikely (Cannon and Hore 1997; Shaeffer 2013). The evidence from international research confirms this conclusion. A review of 1,343 studies addressing the effect of teacher professional development on student achievement in elementary education, found only nine studies meeting stringent criteria for selection. In all of the nine studies, professional development went directly to teachers from specialists of the material taught, or their close associates, rather than through a cascade (Yoon et al. 2007b).

Suzuki (2008) describes mixed outcomes from cascade training in multi-grade teaching in Nepal. Training messages were distorted, and only three concepts survived among 18 throughout the cascade from the central level down to schools. Reflecting the limitations of a quantitative orientation, so prevalent in development thinking, Suzuki notes that even though only three concepts reached the end, the expansion of the messages from only six master trainers to all primary teachers in the nation (91,878 teachers in 1998) during six months is impressive. This study shows that the cascade system can be useful in achieving quantitative targets largely disconnected from teacher-learning. That less than 20% of planned expectations were achieved is not considered. The study reveals the comparative importance donors often place on activities and quantitative targets rather than the real goal of ensuring learning outcomes.

Hayes (2000) examined criteria for the success of cascade training programs in a Sri Lankan Primary English Language Project. Critical criteria Hayes identified were that:

- training was experiential and reflective rather than transmissive;
- rigid adherence to prescribed ways of working was avoided;
- expertise was diffused widely through the system, not concentrated at the top;
- a cross-section of stakeholders was involved in the preparation of training materials;
- responsibilities within the cascade structure were decentralised.

Solutions to address the challenges include ensuring the quality of management, minimising gaps in the cascade, focusing on the needs of classroom teachers in the design of materials, targeting trainees carefully, and not imposing on every teacher including those who may not need training. Shaeffer's Indonesian data on cascade training, showing how significant numbers of trainees achieved little learning gain, and did not need training at all, is revealing (Shaeffer 2013).

The limitations of cascade approaches create dilemmas for educational administrators who must meet the learning needs of large numbers of teachers. Careful design and implementation, based on educational principles and managed with diligent care, common sense, and professional support, are indicated by the current state of evidence on the cascade approach.

4.2.5. Risks to successful CPD: attendance is mandatory but learning is not

Boud and Hager (2012) warn about a growing trend in CPD for the professions. The trend has implications for teacher management where policies introducing greater accountability, regulation, and control are being implemented. Rather than assisting professionals in taking responsibility for their professional development, Boud and Hager note that they have become subject to 'administrative surveillance'. Because it is easier to mandate and measure attendance at CPD activities than almost anything else, formal CPD within organisations has often become synonymous with attendance – and little else. The links to other organisational needs, such as the transfer of learning to the workplace, mentoring, and supervision, are weak or non-existent.

The risk presents a contradiction: a move away from the intended outcomes of CPD – learning, personal growth, transfer to work and organisational change – to inputs, the activity of CPD and attendance. The focus of CPD becomes the activity, not learning, just as it does when the focus is on achieving quantitative targets in cascade training, as discussed above . The problem also mirrors that faced by teachers with their students: attendance is mandatory, learning is not.

It is not surprising that this managerial environment breeds cynicism about CPD among teachers. To repeat the sad quotation in section 4.1:

> … staff development is often mandatory in nature and evaluated by 'happiness scales'. As one observer put it, 'I hope I die during an in-service session because the transition between life and death would be so subtle'. (Timperley and Alton-Lee 2008, 247).

4.2.6. Problem-driven iterative adaptation (PDIA) and CPD

In a critical analysis of foreign aid for development, Easterly (2006) distinguishes between the traditional top-down approaches of centrally located aid 'planners', from local 'searchers'. This top-down planning approach in Indonesia has shortcomings, as reflected in the evidence of the limited sustainability of benefits from projects implemented over nearly 50 years (Cannon 2017). In contrast to the top-down planning approach, searchers working with local communities of practice, find things that work, identify barriers to improvement, accept responsibility, locate resources, and adapt to local conditions and political power structures. They can do this better than the planners because they are a part of local communities, understand local realities, and learn about what is working or not working. PDIA reflects Easterly's concept of searchers and planners. PDIA promotes searching for local solutions to problems and moves away from top-down, pre-packaged solutions (Andrews, Pritchett, and Woolcock 2017).

Two research publications demonstrate the potential for PDIA to inform the design and implementation of CPD in Indonesia. The first publication is from a review of 216 educational development programs implemented in 52 low and middle-income countries between 1990 and 2015. Lessons include educational development designs:

> … informed by an analysis of the main barriers to improved outcomes in a particular context...(allowing) new programmes to target the main constraints and therefore achieve better outcomes (Snilstveit et al. 2016, 3).

Although not citing PDIA directly, this study illustrates that a core element of PDIA, the careful analysis of the local context, brings benefits to an educational development program.

In the second publication, Timperley (2011) finds that sustainable outcomes from CPD are accompanied by teachers working collaboratively with colleagues. The emphasis is on engaging in ongoing cycles of inquiry to develop the adaptive expertise required to apply professional knowledge to problems. Teachers with adaptive expertise have the capability to identify when routines do not work and to seek new information about alternative strategies. This expertise requires strong educational leadership and a school culture that values adaptive learning.

The PDIA approach to development is ambitious, given that the research evidence linking approaches to improving teacher quality to student achievement is limited (Reid and Kleinhenz 2015). As useful as PDIA may be, it is necessary to note that it is not an entirely new approach. Shaeffer proposed four central elements of a participatory approach to CPD that reflect PDIA principles:

- First, the teacher becomes a participant in identifying the needs to which CPD must respond, problems to resolve, and skills and knowledge required.
- Second, the teacher is encouraged to assess issues and to design and experiment with appropriate solutions.
- Third, reflection is encouraged where it leads to teachers learning to find answers to their problems by analysing their situation and practice.
- Fourth, this participatory approach bases reflection on working with children in schools as well as beyond to include local, community-related issues (Shaeffer, in Farrell and Oliveira 1993).

INOVASI's approach using PDIA is well-grounded in history, analysis, and research into educational change and development.

5. The transfer of learning from continuing professional development to the classroom

Chapter abstract

Summary:

Studies indicate a massive waste of continuing professional development (CPD) effort. Estimates of between 52 – 92% of acquired learning lost within one year following CPD are reported in the US, wasting billions of dollars each year. These findings should be of concern in Indonesia where waste may be greater. The persistence of indicators of waste in CPD in Indonesia, combined with our understanding from the research about what works, suggests that opportunities are available to improve returns on CPD investments, opportunities that PDIA seeks to identify. In addition to meeting essential, 'threshold criteria' for quality CPD design and implementation, other promising ways to promote the transfer of learning are a focus on increasing the motivation of trainees and finding ways to induce higher levels of supervisor and peer support. Another solution is the proactive selection of training cohorts to focus CPD on smaller numbers, and 'work with the willing'.

Key concept:

The transfer of learning is defined as the application of learning from CPD to professional practice in classrooms and schools. If CPD is to be effective, and if sustainable change and scale-out are to occur, the transfer of learning from CPD to classes is essential.

5.1. The concept of the transfer of learning

The transfer of learning is the application of learning from CPD to professional practice in classrooms and schools. If CPD is to be considered effective, and if sustainable change and scale-out are to occur, the transfer of learning is essential.

The most thorough diagnosis of local issues, reflected in the best, co-designed, and professionally implemented pilots, with excellent learning outcomes, will count for nothing unless that learning is transferred to teachers' classrooms. Student learning cannot improve in the ways intended if new teacher-learning is not transferred from CPD to classrooms. Logically, there can be no sustainability, nor can there be scale-out. Effective CPD demands an organisational culture that supports the transfer of learning. The transfer of learning is an essential 'threshold criterion' for effective sustainability and scale-out (Table 14).

It is unreasonable to expect that CPD can achieve much in changing teacher behaviour and transferring those changes to classrooms to improve student learning outcomes unless fundamental teacher management and working conditions issues are resolved. These factors are discussed in Chapter 8. Then there is the 'will-do' factor, the motivation of teachers to apply their learning in classrooms. This conclusion to a recent research paper by leading researchers in the transfer of learning summarises the situation:

> … while trained capability is critically important, it is ultimately the willingness of trainees to adapt, generalize, and find opportunities to apply their learning that ultimately determines training success. Prior research on transfer has too often failed to disentangle the 'can-do' and 'will-do' elements of transfer, and the present study empirically validates the importance of doing so (Huang et al. 2015, 721).

'Can-do' is reflected in the feedback of teachers' and principals' perceptions of training, tests of their knowledge, and performance at work through observation. But, how can the 'will do' be supported? To address the 'will-do' challenge and to increase the motivation to transfer learning, Blume et al. (2010) note evidence that providing optimistic previews about training, and presenting positive statements about its benefits to learners, has a moderate and positive relationship with transfer. Another emerging theme identified by Timperley is that teacher motivation to engage in CPD, and to follow-up and transfer their learning to their classrooms, is improved the more student engagement and improved learning is evident to them (Timperley 2011). Assisting to get that kind of feedback is a fundamental characteristic of good educational leadership practices in schools.

Nearly 40 years ago, Georgensen (1982) estimated that of the $100 billion spent on training by American industry, no more than 10 per cent resulted in transfer to work. That is, $90 billion was potentially wasted. Waste continues unabated, according to Hughes (2016) who reports estimates of between 52 – 92% of acquired learning lost within a year following CPD, thus wasting further billions in organisational spending each year.

These findings from the United States, where so much research into professional practice occurs, should be of concern in Indonesia where waste may be similar or higher. One solution is to focus CPD on smaller numbers and 'work with the willing'. The persistence of indicators of waste in CPD in Indonesia (Cannon 2001, 2017; Shaeffer 2013), combined with our understanding from the research about what works, suggests that opportunities exist to achieve improving returns on CPD investments, opportunities that PDIA seeks to identify.

5.2. Research on transfer of learning strategies

Effective CPD demands much more than 'delivering' packages of training. 'Deliver', now unfortunately in widespread use in education, implies that once the CPD package has been delivered, the responsibilities of the training provider for that delivery have ended. Such an irresponsible approach is partly the fault of the language used and undermines transfer and improvements to student learning.

McDonald (2014) developed a comprehensive 'transfer of training audit' tool to identify areas in CPD that can improve effectiveness, transfer, and impact. The tool has components to check the awareness of the dimensions of transfer, the specification of transfer requirements, CPD and transfer planning, implementation, and the evaluation of results.

Teachers' motivation to transfer learning, the organisational support for transfer, supervisor and peer support, and opportunities to apply new knowledge and skills, all correlate moderately and positively with the transfer of learning to work (Hughes 2016). Hughes notes that studies of transfer highlight the role of time in the decline in the use of new skills from as little as two months. A similar finding is that of fade-out, observed after a project has concluded. Fade-out is discussed further in section 9.5. Meta-analyses also show transfer to fade as a function of time (Blume et al. 2010; Huang et al. 2015). Ford, Yelon, and Billington (2011) have disaggregated the contextual factors in transfer – training information provided, working conditions, and individual characteristics – as a way of understanding and evaluating the influences on transfer and to better manage it.

One meta-analytic review of transfer concludes that CPD professionals should consider multiple transfer strategies:

> The most promising ways to promote transfer of learning are the proactive selection of training cohorts, a focus on increasing the motivation of trainees, and finding ways to induce higher levels of supervisor and peer support in the work environment (Blume et al. 2010, 1096).

A USAID study of schools in Indonesia reflects these considerations of cohorts, motivation, and higher levels of support in the work environment. The study found positive change where schools elected to participate in scale-out programs using their own financial resources. The recommendation from this study was to focus on 'early adopters' and to 'work with the willing' (Cannon, Arlianti, and Riu 2014). The evidence is that working with the willing pays direct dividends in those schools and leads to more dissemination from them to other schools. Logically, and as resources are always limited, it is more efficient to adopt this approach initially rather than dissipating resources on the unwilling. Focusing on the willing is not a suggestion to ignore the unwilling, at all. Experience demonstrates that this strategy has three advantages:

- Currently available resources are used more efficiently.
- Initially, new approaches to CPD and scale-out can be trialled, tested and developed with a more willing and tolerant group of practitioners – the 'willing'.
- Many of the initial 'unwilling' teachers eventually become willing participants, and often become strong advocates for change, once they see the positive results flowing from the work of their willing colleagues.

5.3. The cultural context of the transfer of learning

The cultural context in which transfer of learning is expected to occur is a further consideration. Recent analyses of the cultural context in which teaching and learning takes place demonstrate that misunderstanding this factor, and seeking to transfer culturally inappropriate approaches to learning and teaching, is a reliable indicator of potential failure (Sopantini 2014; Guthrie 2018). Those who expect the automatic transfer of best-practice Western ideas and experiences to Indonesia, without considering the accompanying risks of being culturally inappropriate, need to be very sceptical about those expectations (Luke 2011).

5.4. Conclusion

The literature shows that weak links in the chain of educational design, implementation and organisational arrangements for teachers' CPD can impede the transfer of learning and the sustainability and scale-out of benefits to a broader population.

Finally, as valuable as this idea of working with willing may be, it raises yet other complications for development programs such as INOVASI. One complication is how to determine who is willing and who is not. Another is how to manage the individualistic concept of willingness with the group concept of communities of practice. Answers lie in exploiting the knowledge derived from the experience of implementing PDIA. Answers can also be found by learning from careful, direct observation of how Indonesian teachers, schools and sub-districts do work with the willing now, processes explained in the case studies (Chapter 10) and in the USAID study of sustainability and dissemination (Cannon, Arlianti, and Riu 2014).

6. Continuing professional development: research, teachers, and student learning

Chapter abstract

Summary:

The questions asked for this Chapter are: Do the cluster-based short courses change teacher knowledge, beliefs, and practice? Does this improve learning outcomes? For whom? The answer is that INOVASI's approach to CPD, the cluster-based short courses, have demonstrated the potential for positive outcomes for both teachers and students. INOVASI's approach aligns with what is known about CPD. INOVASI's design and implementation of CPD reflect the move in educational development away from narrow 'training' conceptions towards current thinking and practice of professional development as a continuous, professional responsibility. CPD can only achieve so much as a strategy to improve educational quality. An integrated approach to teachers' work is necessary with strategies that respect what we know about human motivation, about what successful Indonesian principals and teachers do in their work, and how to enable all education professionals to achieve their best.

Key concept:

Continuous professional development is professional development that has become an integrated and routine part of a teacher's professional responsibility in their day-to-day teaching. This conception moves further away from the narrow idea of training and from *continuing* professional development, an intermittent and optional add-on to teachers' work, that often takes place away from schools and classrooms.

6.1. The quality of published research

This Chapter analyses the research evidence concerning key questions asked for the study: Do the cluster-based short courses change teacher knowledge, beliefs, practice? Does this improve learning outcomes? For whom?

In a review of approaches to improving teacher quality in developing countries, prepared for DFAT by Reid and Kleinhenz (2015), the limitations of the existing research literature are noted as a caution to proceed very carefully. Findings from this review are presented in greater detail in Chapter 4.

The review provides evidence of quality limitations in the research literature. One is that there is little evidence for the effectiveness of teacher development interventions. Another is that short-term program impacts do not necessarily mean that intervention work at scale, or that results are sustainable. Reid and Kleinhenz conclude that the limited evidence for teacher quality interventions in developing countries suggests a need for greater focus on documenting and explaining the strengths and weaknesses of different solutions. Documentation is something that INOVASI is actively doing through its communications strategies and strategy-testing processes.

Reid and Kleinhenz's evidence notes the small number of studies meeting minimal quality standards. The study of how reforms and programs affect the quality of learning in Indonesia for INOVASI by Rarasati et al. (2017) illustrates this quality issue. These researchers located 2,693 potentially relevant studies of Indonesian students in basic education from a systematic

search. Yet the screening process eventually selected only 25 studies meeting the quality criteria. In another example, an extensive review undertaken by (Glewwe 2011) examined studies published between 1990 and 2010 to investigate which specific school and teacher characteristics in developing countries appear to have positive impacts on learning and time in school. From over 9,000 studies, only 43 high-quality studies were identified.

These systematic reviews of the literature indicate a need for a cautious approach to expecting positive outcomes from teacher CPD. This caution is warranted in light of three key concerns:

- The current state of the research literature in this field has severe limitations.
- The paucity of empirical evidence from Indonesian experience; for reasons that are not clear, there continues to be very little high-quality educational research in Indonesia compared to other developing regions in Africa and Latin America.
- The imprecision in the terms used educational research. The imprecise meaning of CPD used in studies is one example among many.[13] This definitional weakness has been nominated as one of seven conclusions in a *Meta-look at meta-studies of the effectiveness of development assistance to education* by Chapman and Moore (2010).

So, despite the significant resources spent on CPD programs for teachers, rigorous evidence on the effectiveness of such programs is limited and, frustratingly, the evidence we do have is usually mixed. What many studies do, which is helpful in program design and implementation, is to produce lists of qualities of effective practices. Reflective of this practice, several lists are presented throughout this study. These lists are integrated and summarised in Table 7, below. Lists can inform monitoring, evaluation and research designs. They are useful because they are grounded in educational research and experience.

6.2. The international research

The present state of evidence suggests that short courses CPD implemented in teachers' working groups have the potential to change teacher knowledge, beliefs, and practices. Research points to the potential of this approach for professional learning, but only when implemented under certain conditions. The crucial condition is a focus on student learning.

Possibly the most comprehensive and sustained body of work contributing to improving the quality of CPD in school education is the work of Helen Timperley and her colleagues in New Zealand (Timperley and Phillips 2003; Timperley et al. 2007c; Timperley 2011; Muijs et al. 2014). The volume of this work is difficult to summarise succinctly.

A central finding, reflected in INOVASI's approach to educational development is the focus on the classroom and student learning. The meta-analyses of research by John Hattie have consistently shown that the classroom can explain more of the variance in student outcomes than the school level (Hattie 2003, 2011; Waack 2016). A large part of classroom variance can be explained by what teachers do in the classroom (Muijs et al. 2014, 231). A second finding is linked to INOVASI's use of PDIA. This finding is that CPD will likely not succeed unless it is strongly connected to the specifics of how to teach particular groups of students in their local context. In other words, CPD risks being too general to have much impact – hence the importance of establishing a local evidence base in Indonesian contexts.

[13] See also the discussion of evidence of definitional weakness in Chapter 3 on the terms organisation and institution; capacity and capacity in Chapter 4; and Chapter 9 on sustainability and scale-out.

Timperley's book, *Realizing the power of professional learning* (Timperley 2011) and the extensive review, *Best evidence synthesis of CPD* (Timperley et al. 2007), reinforce the importance of addressing the issues of developing learning approaches consistent with how people learn and to focus on specific strategies. Other key findings for INOVASI's practice of CPD from this body of work are:

- The positive role of experts external to the group who can present ideas in ways that promote teacher engagement and learning;
- teacher motivation to engage in CPD and follow-up in schools increases when they have evidence that student engagement, learning, and well-being improve;
- the processes of teacher learning are similar to how students learn. Teachers bring a far richer background of experience that must be factored into CPD activities. This demands more program time to manage experiences, questions, and mindsets;
- teacher learning requires a clear rationale to engage with new knowledge and its implications for practice;
- the previous two dot points on teacher learning emphasise the necessity to provide enough time to learn;[14]
- the focus of new knowledge presented in CPD needs to be on the links between teaching and its impact on student learning;
- extended opportunities for new learning through a variety of activities is necessary with assistance to support transfer by integrating new learning into alternative forms of practice;
- providing opportunities to interact in a community of professionals that supports new ideas and practices focusing on teaching and learning is necessary;
- challenging existing practices: some of the most powerful outcomes from CPD arise when teachers accept that their practice is not optimising students' learning;
- leadership: school leaders need to support change for improved student outcomes. School leaders must actively lead professional learning and, among other responsibilities, avoid 'activity traps' – the risk of becoming so busy with CPD activities and forgetting what the CPD is supposed to achieve.

An unintended consequence of teachers attending CPD, if not managed very carefully, may be similar to the negative consequences arising from teacher absence, an issue of keen research interest in Indonesia (Suryadarma et al. 2006; Suryahadi and Sambodho 2013; Analytical and Capacity Development Partnership 2014).

In her review of how CPD improves teaching, Kennedy (2016) addresses student achievement. Kennedy's conclusions are instructive and have the potential to inform the design and implementation of CPD. They are:

- Program design features may be unreliable predictors of program success;
- programs addressing persistent problems of teaching can improve teachers' effectiveness, whereas programs that focused exclusively on content knowledge tended to have less effect on student learning;
- collective teacher learning in professional learning communities varies in effectiveness. The content they discuss and the nature of intellectual work teachers are engaged in

[14] In the cases studied in Pasuruan and Sidoarjo, several teachers interviewed regretted that the time needed to support their learning was often not available to them.

requires attention. (This conclusion is clearly reflected in Indonesian studies such as those by Sopantini (2014) and Akrom (2019);
- facilitators vary in their value and are more effective in CPD programs where they collaborated with teachers rather than where they only observed or evaluated them.

The review of approaches to improving teacher quality in developing countries by Reid and Kleinhenz (2015) concludes that the limited evidence suggests a need for greater focus on documenting and explaining the strengths and weaknesses of different solutions. Nevertheless, these authors were able to draw the following key findings from their review:

- The most effective professional learning takes place at school level;
- central authorities' and universities' roles in these learning processes should be mainly organisational, facilitative and focused on integrating theory and practice;
- school-based support depends heavily on school leaders who are accountable for the learning of their students and who promote the conditions for successful student outcomes, especially the CPD of teachers;
- mentoring of less experienced teachers by experienced colleagues is a necessary part of school-based professional learning (and especially important in contexts such as those faced by INOVASI where many practising teachers may have little or no formal teacher training);
- the lesson-study approach works well with a highly educated and motivated teaching workforce. If introduced gradually and supported through school clusters, teacher performance and lesson-centred approaches may work in resource-constrained contexts;
- teacher resource centres need to be conveniently located, and schools must have relief teachers so staff can use the resource centres.

In support of these conclusions, Reid and Kleinhenz (2015) refer to work on effective CPD that tends towards producing 'consensus statements'. For example, they cite Ingvarson, Meiers, and Beavis (2003) who synthesised a range of research literature and identified five features of high-quality teacher professional development under the organising concept of 'opportunity to learn'. The five features were common to most examples cited in the literature as good practice in teacher CPD. Effective teacher development has:

- A content focus, meaning that professional learning is more likely to improve student learning outcomes if it increases teachers' understanding of the content they teach, how students learn that content, and how to represent and convey that content in meaningful ways;
- provides opportunities for active learning;
- provides feedback on teaching;
- involves the collaborative examination of student work;
- provides follow-up for teachers in schools.

Reid and Kleinhenz do not go far enough, however, in drawing attention to the paucity of rigorous evidence of the link between CPD and student learning outcomes.

Chapman and Moore (2010) analysed findings of nine evaluation meta-studies where the value of the underlying project activities reviewed was USD 6-8 billion. Identified in almost all of the meta-studies reviewed was the limited evidence regarding the impact of the project activities

in promoting student learning.[15] Similarly, across 33 USAID education aid projects reviewed for the years 1990–2005, Chapman and Quijada (2009) found that most interventions proposed increasing education quality as a goal, but few assessed growth in student learning as an outcome.

Kennedy's final words of advice from her detailed review are instructive for both educational developers and for educational administrators:

> We need to ensure that CPD promotes real learning rather than merely adding more noise to their working environment (Kennedy 2016, 974).

In their systematic review of educational interventions in low and middle-income countries, Snilstveit et al. (2016) report the effectiveness of interventions in improving children's enrolment, attendance, and learning outcomes. They note that programs using 'structured pedagogy'[16] to change the classroom environment had more significant and consistently positive effects on learning among programs included in their review. Most structured pedagogy interventions include the development of evidence-based curricula and instructional approaches, along with lesson plans and CPD for teachers in teaching new material.

Evans and Popova (2016) note two key messages about what works well in improving learning reported in some form across a majority of reviews. The first message is that both student learning interventions and CPD are most effective when tailored to the students or the teachers involved. The second is that pedagogical interventions must change students' learning experiences and be adapted to individual student learning levels.

Courtney (2007) identified a weakness with the provision of CPD in Cambodia when delivery methods were culturally inappropriate and where the focus was on time spent in the program rather than on program quality. Courtney stresses the following points in addition to items found in the kinds of 'consensus statements' referred to above. CPD should be:

- sensitive to the local context;
- appropriate for teachers undertaking the program, and provide practical classroom skills;
- developmental and cyclical.

To conclude where this Chapter began with the question of imprecision, is that most studies do not provide clear definitions or sufficient information about the actual content, the detail of CPD implementation, or follow-up of CPD, to help understand the practicalities of what works, why, where, and for whom.

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[15] The limited evidence reflects the very considerable resources of expertise, time and finance required to prepare, trial, evaluate, and implement valid and reliable tests of student learning. These resources are usually not available in short-term development programs or in developing country partnerships.

[16] 'Structured pedagogy programs seek to address several barriers to learning. These barriers could be in the form of inadequately trained teachers, lack of appropriate materials, curricula and instructional approaches. Structured pedagogy programs usually combine the provision of both 'hardware' and 'software'. A central element of most interventions is the development of evidence-based curricula and instructional approaches, along with lesson plans and training for teachers in delivering new content and material for students.' Source: Snilstveit et al. 2016, 25.

6.3. The Indonesian research

Only one systematic review of studies affecting the quality of student learning in Indonesia could be located for Indonesia. This is a review of factors linked to Indonesian students' literacy and numeracy outcomes. Working with INOVASI, Rarasati et al. (2017) conducted a meta-analysis of 25 studies. Conclusions reached from the analysis relate to both policy and program recommendations:

- For policy, the conclusion is that teacher incentives and employment policies do not seem to enhance the quality of teaching and learning in schools; policies need to be re-assessed to achieve their intended purpose to increase student learning outcomes.
- For programming, they find strong evidence of the effect of using teaching strategies based on students' needs for improving learning. Teachers need sufficient content and pedagogical knowledge to be able to implement the most appropriate teaching strategy and to understand problems in the classroom.

Chang et al. (2014) point out that most attempts to enhance the quality of teaching in Indonesia are piecemeal in fashion. They propose a framework for a comprehensive approach to teacher management and development. These components include recruitment, preservice education, induction, mentoring, probation, formal certification, continuing professional development, teacher performance appraisal, and ongoing career development. Their view of CPD reflects thinking that goes beyond considerations of simplistic training solutions, to include teacher appraisal and career development.

Research and evaluation studies of CPD linked to donor-supported educational development programs in Indonesian education have produced mixed results but also approaches to managing the challenges identified, such as the development and use of teachers' working groups. Cannon (2001) found weak evidence of the impacts of CPD in a review of studies in the education sector. Using Baldwin and Ford's analytical framework (Baldwin, & Ford 1988), he finds that the absence of systemic and organisational commitment to trainees and CPD generally impedes achieving positive outcomes from CPD.

However, the necessary institutional and organisational commitments are evident in a later study by Heyward, Cannon, and Sarjono (2011) who identify factors associated with the impact of a USAID-funded project in Indonesia aimed to improve management and governance in basic education. Each of the factors listed below from their work reflects findings from international research on CPD and the principles of PDIA informing INOVASI's current work with schools:

- the program was school-based, and the whole school community participated;
- training was in school clusters, ongoing, and follow-up mentoring was provided;
- the training was implemented through local systems and based on government policy;
- the approach provided technical assistance rather than funding;
- the program was manageable and affordable for local partners;
- commitment was built at provincial and district levels.

These factors demonstrate the mutually reinforcing interplay of technical, political and cultural factors in change.

The literature from different domains – PDIA (Andrews, Pritchett, and Woolcock 2017), culture and classrooms (Guthrie 2011, 2018), and teacher professional learning (Timperley et al.

2007; Timperley 2011), all show consideration of these three factors to be essential elements in implementing successful educational change and development.

6.4. INOVASI's approach to CPD

The review of the literature and INOVASI's program documents show that INOVASI's short courses approach, implemented through teacher's working groups, is well-supported by the current evidence. Moreover, the practices adopted by INOVASI show a move away from older top-down, 'training' conception of CPD towards a broader and inclusive conception that embraces the idea of continuous learning. Table 4 provides a synopsis of these changes.

Table 4: Changing conceptions of CPD and INOVASI's practice

Elements of CPD	Past practices in training and CPD	Towards continuous professional development in INOVASI
Concept	Narrow training/CPD concept provided top-down by organisation; learners passive recipients at 'sit-and-get' events.	Broader and inclusive; from 'one-off' CPD events towards continuous professional development; learners are active partners.
Strategies	Focus on activities addressing organisational needs and perceived deficiencies in the workforce.	Increasing focus on learner's needs and capacities to learn from context, learning collaboratively and continuously with peers.
	Formally structured programs (degrees, courses, workshops and seminars).	Variety of relevant structures including learning at work, collaboratively with peers. 'life-wide' learning.
	Defined duration with defined commitments (four-year degrees; three-day workshop; one-hour lecture).	Longer duration with more open-ended commitments reflecting the idea of continuous professional development.
	Managers and external specialists set the agenda.	Iterative co-construction of agendas and curricula.
	Focus on training and activity – what the provider does.	Focus on learning – what the learner learns.
	Theories based on psychology of the individual; the individual is the beneficiary and the individual is responsible.	Theories also include social and organisational theories, hence involvement of managers and colleagues; collective responsibility.
	Transfer of learning to local context is a problem to be solved by the learner.	Design supports continuing learning and adaptation through collaboration and mentoring.
	Accountability, surveillance, 'sit-and-get'.	Learning, participation, collaboration.
Context	Nature of context rarely factored into program.	Context has a central role in CPD strategy.

Elements of CPD	Past practices in training and CPD	Towards continuous professional development in INOVASI
	CPD commonly occurs in formal organisational settings or off-site.	Learning takes place in variety of locations ideally in the work setting.
Focus	Narrow focus on training/developing individuals' capacities.	Expanded focus on developing the context and organisation; addresses inclusion and social equity.
Motivation	Dominantly extrinsic; formal organisational requirements, elements of accountability, rewards and punishments linked to attendance at training events.	Movement towards intrinsic motivation linked to needs and work outcomes; recognition that teacher motivation increases when student learning improves following CPD.
Domain	Emphasis on cognitive learning and practical skills.	Cognitive learning and practical skills, affective aspects of learning (mindsets) and social equity issues.
Gender, equity, and inclusion	Rarely considered in design and implementation of CPD.	Movement towards becoming an essential consideration.
Responsibility of trainer/facilitator	Implementing training; program design, implementation, and assessment.	Supporting continuous learning; program design, implementation, assessment, transfer, mentoring.

6.5. Does CPD change teachers' knowledge, beliefs and practices?

The emerging evidence suggests the answer to the question is 'yes'.

The evidence comes from three sources: INOVASI's formal Six-monthly progress reports, the two case studies in East Java reported in Chapter 10, and data presented by INOVASI in 2019.

INOVASI finds that CPD provided in teachers' working groups can make a significant difference to teachers and students (INOVASI 2018a, 2020). Evidence comes from early work with the *Guru BAIK* pilot and more recent pilots. After participating in the *Guru BAIK* pilot, teachers felt more confident to solve learning issues independently. Teachers' pre-post test scores improved on various indicators, for example, in:

- identifying learning difficulties;
- identifying the root causes of learning difficulties;
- developing learning scenarios;
- in developing summative and formative assessments.

The two districts case studies in East Java schools provided indicators of teacher learning and student learning outcomes from their teachers' participation in pilots (see Appendix). There were consistent expressions of satisfaction with the outcomes from pilots by teachers, principals and supervisors in case study schools, and in both districts. Teachers' capacity to engage in more in-depth analysis of learning and teaching issues during visits, and their unsolicited requests for further CPD in literacy and numeracy, are indicative of changed

teacher knowledge, beliefs and practices. Evidence of students' worksheets, the quality of teaching materials, the availability of books, and the physical condition of classrooms were further indicators of changing practices.

Table 5 illustrates results from key indicators measured in INOVASI's spot-checks conducted across all pilots between March and May 2019. INOVASI's *Six-monthly progress report* notes that the results

> …tell a story about the efficacy of our general approach to adapting generic short-course materials to local contexts. Indications of change were identified in 273 randomly sampled schools (INOVASI 2019, 19).

The data in Table 5 reveal a consistent pattern of changed practice across all provinces, from baseline to spotcheck, and for each of the four teaching practices listed. That pattern of consistency is an indicator of the overall reliability of the data set.

Table 5: Improved teaching practices: baseline vs spotcheck results

Source: (INOVASI 2019g, Annex Four)

Percentage of teachers demonstrating improved teaching practices								
	East Java		**East Nusa Tenggara**		**West Nusa Tenggara**		**North Kalimantan**	
Teaching practice	**Baseline**	**Spot-check**	**Baseline**	**Spot-check**	**Baseline**	**Spot-check**	**Baseline**	**Spot-check**
Teachers use teaching aids/media appropriate to students' needs.	61	91	47	63	40	87	27	73
Teachers provide feedback on students' work.	57	97	75	95	49	95	73	82
Teachers explain the purpose of learning in the opening session.	43	53	41	50	35	68	18	Missing data
Teachers in the school meet regularly with the principal to discuss teaching and learning.	91	94	78	88	86	95	73	93

6.6. Does CPD improve learning outcomes for students?

The emerging evidence suggests the answer to the question is 'yes'. The evidence supporting improvements is consistently positive. Three sources of evidence suggest CPD improves learning outcomes for students following teachers' participation in the literacy and numeracy pilots. The sources are INOVASI's formal six-monthly progress reports, the two case studies in East Java reported in Chapter 10, and data presented by INOVASI in 2019.

A simple cause-and-effect relationship between teacher participation in pilots and student learning outcomes, however, cannot be concluded. There is only evidence that the improvements are associated (correlated)[17] with the pilots. It is also possible that this association reflects the impact of the Hawthorne effect.[18]

Demonstrating improving learning outcomes, INOVASI reports that test scores in the early *Guru BAIK* pilot for the grade 1-3 children improved. The improvement was 55% for mathematics, and 20% for Bahasa Indonesia (INOVASI 2018a, 8).

Case study evidence of improving learning outcomes from the pilots is consistent. Unfortunately, one of the gaps in school administration is that record-keeping of students' test results and academic work is poor. Therefore, evidence must come from other sources, including teachers' observations, the results of children's class work, and observations of children's behaviour. Teachers in all case study schools visited provided consistent reports of improved learning outcomes, student motivation, and behaviour. Teachers reported personal satisfaction with their participation in pilots and the results they were getting from children. Observations during visits, including inspection of students' work, and the materials they were working with, provided confirming evidence that these teachers' reports were likely to be valid.

Table 6, below, developed from INOVASI's endline studies and spot checks conducted between July – December 2019, shows that improvements in students' learning outcomes occurred in aggregate across the whole program. Key conclusions to be drawn from this data set are:

- Improvements are reflected in results for both INOVASI and grantee pilots;
- male and female students show improvements in all literacy and numeracy tests reported;
- female students score higher in baseline and endline tests. The differences are higher for basic literacy but only marginal in the literacy comprehension and numeracy comprehension tests.
- grantee pilots achieved marginally weaker endline scores and gain scores for both female and male students compared to INOVASI pilots. Baseline scores for the grantee and INOVASI pilots are similar (INOVASI 2020, Annex Five).

[17] Correlation does not imply causation. From the existing data, a cause-and-effect relationship cannot be deduced between the variables of pilot participation and improved student learning outcomes only on the observed association between them.

[18] The Hawthorne effect is a type of research reactivity in which participants (principals, teachers, students, parents, anyone) modify their behaviour in response to their awareness of being observed or tested. Their reactivity undermines the integrity of the research, thus making the results less reliable. The validity of relationships between variables being reported (pilot – outcomes) is, therefore, suspect. The novelty of children being research subjects, and the increased attention they receive in pilots, can lead to temporary increases in their behaviour and test results. This can have a positive and practical educational effect, but is nevertheless a problem when the primary concern is research. Source: https://en.wikipedia.org/wiki/Hawthorne_effect

Table 6: Improvements in students' learning outcomes

Source: INOVASI's endline studies and spot checks, July – December 2019

Students passing basic literacy test (%)						
	Female			Male		
Pilots	Baseline	Endline	Gain	Baseline	Endline	Gain
INOVASI	64	84	20	51	73	22
Grant	60	80	20	50	70	20
Average score of literacy comprehension test						
	Female			Male		
Pilots	Baseline	Endline	Gain score	Baseline	Endline	Gain score
INOVASI	59	71	12	54	69	15
Grant	60	69	9	56	67	11
Average score of numeracy comprehension test						
	Female			Male		
Pilots	Baseline	Endline	Gain score	Baseline	Endline	Gain score
INOVASI	51	71	20	49	70	21
Grant	51	69	18	50	68	18

6.6.1. Student agency and participation: the 'missing students'

There is growing acceptance of the idea that our understanding of the way students learn has general applicability for the way teachers learn. Yet, in studies of educational development in Indonesia and elsewhere, there is a curious and very significant omission. What most reviews and studies miss is the student for whom all the effort to improve the provision, access, and quality in education is ultimately directed. As Hattie has pointed out, 50% of the variance in student achievement is related to who and what the student is, and what the student does (Hattie 2003). One astonishing example of the missing student is in the theory of change presented in a systematic review of policy interventions supporting student learning in developing countries (Masino and Niño-Zarazúa 2016). A set of change factors and interventions are advanced to lead to higher student achievement. Yet the theory of change does not directly represent students or teachers, at all.

Respecting and acknowledging that students have agency in their learning is a significant gap in the research literature and the practice of educational development. The gap needs to be filled. So too does the gap in understanding the complex concepts and processes of participation in education, what works – and why – in getting children into schools, ensuring that they stay, safely make the necessary transitions to school, between grades and levels of

schooling, and participate effectively, so as to complete a full school education (Cannon and Arlianti 2009).

6.7. Summary and conclusions

The questions asked for this Chapter were: Do the cluster-based short courses change teacher knowledge, beliefs, practice? Does this improve learning outcomes? For whom?

INOVASI's approach to CPD, the cluster-based short courses, has the potential for positive outcomes for both teachers and students.

Table 4 demonstrates how INOVASI's approach aligns with what is known about CPD. The Table shows how INOVASI's design and implementation of CPD reflects the move in educational development away from traditional, narrow 'training' conceptions of professional development towards current thinking and practice of professional development as a continuous, professional responsibility.

The positive conclusions here, based on a review of the literature and the emerging evidence from INOVASI's work in Indonesia so far, nevertheless, need to be considered with caution. There are two reasons for this caution.

First, the literature provides limited evidence about teacher quality interventions in developing countries. There is also a paucity of high-quality research about interventions in Indonesia. There is a pattern of factors associated with successful outcomes from CPD, nevertheless. For example, it is becoming clear that teacher professional learning benefits from CPD being offered in communities of practice, programs that focus on classrooms and student learning needs, implementation that requires cycles of learning, transfer, application, support, and feedback. This pattern is presented in Table 7: Threshold criteria for effective CPD, where 'threshold' is intended to mean the minimum criteria to be present or addressed to minimise the risk of CPD failing to achieve its intended outcomes. Unless the threshold criteria are met, there is the probability CPD will fail. One consequence of failure is that both sustainability and scale-out of change will be impossible to achieve.

Second, the emerging data from INOVASI provides consistent evidence of improvements in teachers' practices and students' learning outcomes. Again, however, caution is necessary as convincing proof is not available from existing data. As consistent as the evidence may be, a simple cause-and-effect relationship between teacher participation in pilots and student learning outcomes cannot be concluded with safety. There is, however, evidence from several sources that the improvements are associated (correlated) with the pilots.

CPD can only achieve so much as a strategy to improve educational quality. As Chang et al. (2014) have argued, an integrated approach to teachers' work is necessary. The approach should never be a surveillance system of mandatory CPD, accountability, and simplistic rewards-and-punishments style performance reviews. Instead, the evidence suggests constructive strategies that respect what we know about human motivation, about what successful Indonesian principals and teachers do in their work, and how to *enable* all education professionals to achieve their best. Chapter 8 considers these ideas in detail.

Table 7: Threshold criteria for effective continuing professional development

Threshold criteria for effective CPD	Sources: reviews and studies
Contextual and policy matters	
Consistency of CPD with policy and research.	Timperley et al. (2007, 2011)
Indonesian teacher incentive and employment policies need to be re-assessed to achieve their intended purpose to increase student learning outcomes.	Rarasati et al. (2017)
CPD is implemented through local systems and based on government policy.	Heyward, Cannon, and Sarjono (2011)
CPD is sensitive to the local cultural context.	Courtney (2007); Guthrie (2011, 2018)
Donor approaches provide technical assistance rather than funding.	Heyward, Cannon, Sarjono (2011)
The mutually reinforcing interplay of technical, political and cultural contextual factors of CPD are essential elements to consider in implementing successful CPD.	Timperley et al. (2007; Timperley (2011); Andrews et al. (2015); Guthrie (2018)
Conception of CPD shifts away from short-term, one-shot, training approaches towards continuous, lifelong learning, particularly among communities of teacher-practitioners (see also next section, Location of teacher's CPD, below).	Timperley et al. (2007a); Heyward, Cholifah, Nuraini (2018); The World Bank (2015)
Location of teacher's CPD; teachers' working groups	
Attempts to improve teacher quality not based on teachers' working groups are not sustained.	Cannon, Arlianti, and Riu (2014)
Professional learning occurs best at school level and in communities of practice. Operational/maintenance organisational structures do not cope well with the demands of development; achieving maintenance and development goals in the one organisational structure means they usually do neither satisfactorily, hence need for communities of practice (e.g., specific educational development structures such as the teachers' working group).	Reid and Kleinhenz (2015); Timperley et al. (2007, 2011); Kennedy (2016); Heyward, Cannon, and Sarjono (2011); Creemers and Kyriakides (2012)
The teachers' working group and similar working groups for principals are a locally developed educational institution/structure that have demonstrated sustained contributions to the development of education since the late 1970s.	Malcolm (1998); Cannon and Arlianti (2008)
The teachers' working group has been shown to be a valid and culturally appropriate approach to teacher learning, a means to implement CPD, and to strengthen the link between CPD and student outcomes.	Akiba and Liang 2016; Timperley and Alton-Lee 2008; Vescio, Ross, and Adams 2008; AusAID 2013; Chang et al. 2014

Threshold criteria for effective CPD	Sources: reviews and studies
Teachers' working groups face constraints: focus on administrative topics; limited capacity; lack of a support system; lack of time; unequal distribution of teachers; and geographical challenges.	Akrom (2019); Sopantini (2014)
Classrooms are more important than schools in determining how children perform at school. 'The problem of enactment' challenges the validity of CPD where developers meet with teachers for CPD outside of teachers' classrooms to learn about teaching, yet they expect their work to alter teachers' behaviours inside the classroom.	Muijs and Reynolds (2001) in Timperley and Alton-Lee (2008); Hattie (2009); Joseph (2019); Kennedy (2016)
CPD in teachers' working group may not work well for technical weaknesses in design and implementation: absence of pragmatic CPD goals; neglect of teaching; missing opportunities for teachers to see the outcomes of their CPD on student learning.	Sopantini (2014)
Teachers and teachers' knowledge, understanding and learning	
Teacher knowledge plays a large role in student learning; the evidence that CPD has on student learning is ambiguous but generally positive.	Glewwe (2011)
The most effective teachers have a flexible beliefs structure rather than falling into a single orientation.	The World Bank (2015)
There is a strong, positive correlation between teacher subject and pedagogical knowledge and student learning; an indication that this knowledge is a critical element in teacher effectiveness.	The World Bank (2015)
Effective CPD has a content focus; professional learning is more likely to improve student learning if it increases teachers' understanding of the content they teach, how students learn that content, and how to teach that content.	Ingvarson, Meiers, and Beavis (2003); The World Bank (2015)
Teacher motivation increases when they have evidence that student outcomes improve.	Timperley et al. (2007, 2011)
Programs addressing persistent problems of teaching can improve teachers' effectiveness whereas programs that focus exclusively on content knowledge tend to have less effect on student learning.	Kennedy (2016)
Poor outcomes can be due to the low capacity among teachers to conceptualise and implement appropriate development activities.	Sopantini 2014
Poor outcomes likely when informed by 'deficit thinking', when experts develop prescribed practices for teachers.	Timperley and Alton-Lee (2008)
Effective CPD has a content focus; professional learning is more likely to improve student learning if it increases teachers' understanding of the content they teach, how students learn that content, and how to teach that content.	Ingvarson, Meiers, and Beavis (2003)
'Opportunity to learn' – effective practices in implementing CPD	
Teacher learning requires a clear rationale that links content, pedagogical, and assessment knowledge and its implications for practice; teachers must have adequate time to learn in CPD.	Timperley et al. (2007, 2011)

Threshold criteria for effective CPD	Sources: reviews and studies
CPD should take a developmental approach and be cyclical; ongoing; with follow-up mentoring. The most effective schools drop to average effectiveness where improvement efforts not implemented on a continuous basis.	Courtney (2007); Timperley et al. (2007, 2011); Heyward, Cannon, Sarjono (2011); Creemers and Kyriakides, (2012)
CPD needs to provide opportunities for active learning; provide feedback on teaching; involves collaborative examination of student work; provides follow-up for teachers in schools.	Ingvarson, Meiers, and Beavis (2003); Reid and Kleinhenz (2015)
The lesson-study approach works well with educated and motivated teaching workforce. If supported through school clusters, lesson-centred approaches may work in resource-constrained contexts.	Reid and Kleinhenz (2015)
Material must be appropriate for teachers undertaking CPD and provide practical and replicable classroom skills.	Courtney (2007)
Transfer of learning and continuing support	
Transfer of learning requires management, and systemic and organisational commitment to participants and to high standards of CPD implementation.	Cannon (2001); Blume et al. (2010); Timperley (2011); Huang et al. (2015); Hughes (2016)
Teachers require continuing support if they are to change their practices. Continual support through CPD and practical applications in classrooms appear to be an effective way to change teacher beliefs, to improve levels of teacher knowledge, and to change practices in the classroom.	The World Bank (2015)
Educational leadership	
School-based support depends heavily on school leaders who are accountable for the learning of their students and who promote the conditions for successful student outcomes, especially the CPD of teachers	Reid and Kleinhenz (2015)
School leaders and system leaders need to learn to support improved student outcomes and actively lead professional learning opportunities and, among other responsibilities, avoid 'activity traps' – the risk of becoming so busy with CPD activity and forgetting what the CPD is supposed to achieve.	Timperley et al. (2007, 2011)
Management of CPD	
Some CPD risks taking teachers out of the classroom, so that an unintended consequence of CPD may, if not managed very carefully, be similar to the negative consequences arising from the widespread issue of teacher absence from schools.	Suryadarma et al. (2006); Suryahadi and Sambodho (2013); ACDP (2014)
Teacher resource centres (including teachers' working groups) need to be conveniently located. Schools must have relief teachers so staff can use the resource centres.	Reid and Kleinhenz (2015)
Programs are manageable and affordable for local partners.	Heyward, Cannon, and Sarjono (2011)
CPD is more than simplistic training; needs to be linked to teacher appraisal and career development.	Chang et al. (2014)

Threshold criteria for effective CPD	Sources: reviews and studies
Cascade approaches can succeed if carefully designed and implemented.	Hayes (2000); Allaburton and Scheding (2007); Shaeffer (2013)
Organisational support	
Central authorities' and universities' roles in these learning processes should be mainly organisational, facilitative, and focused on integrating theory and practice.	Reid and Kleinhenz (2015)
Technical weaknesses are a risk to be addressed: risks are located in weak local government organisations, and weak quality assurance institutions the Lembaga Penjaminan Mutu Pendidikan (LPMP).	Sopantini (2014)
Mentoring by experienced colleagues is a necessary part of school-based professional learning.	Reid and Kleinhenz (2015)
Experts external to the group can present ideas in ways that promote teacher engagement and learning.	Timperley et al. (2007, 2011)
Facilitators are more effective in CPD when they collaborate with teachers rather than only observe or evaluate them.	Kennedy (2016)
Commitment is built at provincial and district levels.	Heyward, Cannon, and Sarjono (2011)

7. Educational development and teachers' working groups

Chapter abstract

Summary:

The teachers' working group, the *kelompok kerja guru* (KKG) is a culturally appropriate institution for the implementation of educational development. KKG have the potential to strengthen the link between CPD, student outcomes, sustainability, and scale-out. When well-implemented, KKG are effective and well-regarded by teachers. A challenge, however, comes from the evidence that KKG activities show an over-emphasis on 'maintenance' matters such as administrative arrangements, developing test items, and social cohesion, but not on professional learning intended to improve learning and teaching. More attention to these challenges will likely improve the outcomes from CPD conducted in KKG.

Key concepts:

The KKG is an Indonesian educational institution for the implementation of continuing professional development (CPD). The KKG is an Indonesian example of a professional community of practice. Communities of practice have four key elements: a domain of knowledge, a community, a shared practice, and leadership.

7.1. The characteristics of teachers' working groups

The school cluster-based teachers' working group – the *kelompok kerja guru* (KKG) – is an Indonesian educational institution for the implementation of CPD. Most of the CPD implemented by INOVASI and its partners takes place in KKG , for example, the INOVASI pilots intended to improve teachers' understanding of literacy, numeracy and inclusion (Heyward, Cholifah, and Nuraini 2018).

The KKG and similar working groups for principals and supervisors[19] are noteworthy in Indonesian education. A locally developed institution, KKG have demonstrated sustained contributions to the development of education since the late 1970s (Malcolm 2001). Many educational development projects have reported favourably on KKG (Cannon and Arlianti 2008). This continuity of contributions demonstrates that they are a sustained and accepted institution for teacher CPD in Indonesia.

The KKG is an example of a community of practice (Lave and Wenger 1991). Requiring collaboration among teachers, CPD takes place within a work-based community. Also known as professional learning communities (Vescio, Ross, and Adams 2008), this community comprises teacher participants from about 4-12 proximate schools that meet routinely. The community concept refers to the process of learning that occurs when people who have common goals work together towards achieving those goals within a small social system. Communities of practice for teachers have four key elements:

- a 'domain' of knowledge, such as student learning, situated in the day-to-day classroom experiences of teachers;

[19] For principals, the *kelompok kerja kepala sekolah* (KKKS) and for school supervisors, the *kelompok kerja pengawas sekolah* (KKPS).

- a 'community'; members who care about that domain;
- a shared 'practice' experienced by community members in the group, such as reviewing teaching practices that support student learning;
- leadership, an essential success factor in communities of practice (Buysse, Sparkman, and Wesley 2003; McDonald 2015; Timperley, et al. 2007).

During the past 20 years, empirical research has shown that effective CPD is best located within a professional community of practice supporting teacher learning that focuses on student learning (Timperley and Alton-Lee 2008; Webster-Wright, 2009). A systematic review of these communities of practice by Vangrieken et al. (2017) shows how different types of communities, ranging from formal top-down to informal teacher-led communities can be useful for achieving different kinds of outcomes. Achieving satisfactory outcomes does not occur naturally; the review finds three requirements for success:

- leadership of two kinds – facilitation and school educational leadership;
- positive group dynamics that underpin effective learning;
- a group culture of trust and respect among participants that supports and encourages members to be open and where they feel safe to take risks.

Leadership, group dynamics and trust are demanding qualities in any educational system. The evidence we have from Indonesian studies and experience is that these qualities are missing in some of the teachers' working groups studied (Sopantini 2014; Akrom 2017).

INOVASI's approach of bringing work with KKG into the fore is promising, especially for achieving the goals of scaling and sustainability particularly because collaboration is essential for scaling-out (Weißenrieder et al. 2015). The case study evidence from Pasuruan and Sidoarjo reveals several examples of collaboration occurring, both within schools and between schools.

Three characteristics of KKG contribute to sustainability:

- their alignment with Indonesian social and cultural practices;
- alignment with what we know internationally about learning in communities of practice (Timperley et al. 2007)
- being an institution that supports educational development.

KKG do not have the same roles and structures of schools and district government organisations. These operate and maintain educational services – they maintain and organise teaching and learning, assessments, infrastructure, and other school activities. Such maintenance structures may not cope with the demands of professional development. There is empirical evidence showing that attempts to achieve both maintenance and professional development goals in the one organisational structure means that they do neither satisfactorily (Creemers and Kyriakides 2012, 11).

7.2. The effectiveness of teachers' working groups

The KKG is a culturally appropriate approach to teacher learning, with the potential to strengthen the link between CPD, student outcomes, sustainability, and scale-out. Evidence for these claims can be found in international literature (Akiba and Liang 2016; Timperley and Alton-Lee 2008; Vescio, Ross, and Adams 2008) and in Indonesian sources as well (AusAID 2013; Chang et al. 2014).

A recent review for DFAT of the effectiveness of approaches to improving teacher quality in developing countries, concludes that the most effective forms of CPD occur in teachers' schools or clusters of schools (Reid and Kleinhenz 2015). The review finds that development occurring independently of the school context and without on-going support for implementation is weakened by the realities of the classroom environment, lack of understanding among teaching colleagues, fear of being negatively evaluated for deviations from accepted routines, and the attitudes of school leaders. Evaluation of CPD for Indonesian principals illustrates these findings very clearly, particularly the importance of on-going support for implementation (AusAID 2013).

Indonesian research identifies barriers to achieving satisfactory CPD outcomes. Sopantini (2014) reported that many teachers in her North Maluku study of reforming teaching practice faced barriers such as the capacity to design quality learning experiences and to manage CPD themselves. An INOVASI study of one KKG in Sumbawa finds that although the teachers met regularly and attendance rates were consistently high, the impact on professional development and student learning outcomes was small (INOVASI 2017). Too much emphasis on routines and administrative tasks, low human resource capacity, and lack of local government's support contributed to this outcome. Nevertheless, both the Maluku and Sumbawa studies show how well-accepted the idea of the KKG is in the social and institutional culture of teaching in those two locations.

Other studies reveal similar levels of acceptance. An evaluation for the *Professional Development for Education Personnel Program* (ProDEP) reports that working groups are beneficial. Of the teachers surveyed, over 50% indicated that their school principal encouraged their participation in cluster activities (Australia's Education Partnership with Indonesia. Education Partnership Performance Oversight and Monitoring. 2015). The World Bank's study of teacher reform also presents positive accounts of working group processes and outcomes (Chang et al. 2014). However, most of these studies stop short of examining the link with improved student learning outcomes. They focus instead on what teachers do, think, and report (Rashid, Moedzakir, and Efendi 2017; Wiyono and Triwiyanto 2018).

The findings demonstrating the broad cultural relevance of the community of practice concept in Indonesia are significant. At the policy level, the concept has been recognized in a World Bank study as '… the most viable and accessible avenue for most teachers to receive continuing professional development' (Chang et al. 2014, 83). This is good news. The Bank has estimated that a massive organisational structure for CPD exists of well over 60,000 KKG in Indonesia (Chang et al. 2014).

As Kennedy (2016) notes in her review of reviews, the effectiveness of CPD implemented through professional learning communities varies everywhere. She notes that we need to examine more closely what such groups do and the nature of intellectual work they are engaged in, a matter also identified in the Indonesian studies.

7.2.1. CPD in teachers' working groups

The implementation of CPD through KKG has been an overall success (Chang et al. 2014). Work conducted by the World Bank confirms the following features of the best groups. The list provides a framework for the future evaluation and development of KKG:

- sizes of approximately 6–10 schools for a KKG cluster of primary schools;
- bi-weekly working meetings (approximately 16 meetings per year);
- financial and technical support;

- frequent visits from the district education staff, supervisors, and principals;
- focused meetings that last approximately four hours;
- small-group work;
- nearly full attendance by all teachers in the working group;
- office-bearers consisting of at least a chair, a secretary, and a treasurer;[20]
- a focus on activities such as the discussion of subject matter, the development and practice of teaching methods, and student achievement (Chang et al. 2014, 83).

The Bank's study shows a shift in KKG activities away from testing and administrative matters in 2007 towards a greater diversity of classroom-focused activities in 2010 that included a focus on student learning. Moreover, an improvement in the quality of those activities is noted.

KKG are effective in increasing the knowledge levels of teachers:

> …while there was some gain in cognitive (subject) ability, the larger gain was in pedagogical (teaching method) ability. This finding is in line with the reorientation of working group activities toward syllabus development, lesson study, and training' (Chang et al. 2014, 86).

The World Bank's study offers this concluding advice on teacher working groups:

- it is not sufficient to leave teacher working groups on their own without guidance;
- teacher working groups need funding and a structured program of improvement to implement;
- structured programs, clearly focused on subject content, and presented within a comprehensive program of classroom lesson improvement are required;
- the work of teachers', principals' and supervisors' working groups need to be aligned;
- regular meetings should be a requirement for funding (perhaps 16 sessions per year);
- regular, rigorous auditing of teachers' classroom products, including lesson implementation, improvement, and financial records, is recommended (Chang et al. 2014, 87).

The qualities of effective working groups shown above contrast with a list of *ineffective* factors of professional development identified by Díaz-Maggioli, (2004). These factors, sometimes observed in Indonesian CPD activities, include the following:

- a top-down, centrally-driven, one-size-fits-all approach;
- a 'fix-it' approach that assumes teacher 'deficits';
- prescriptive ideas and decontextualized programs in contrast to addressing local needs;
- fixed and inconvenient timing;
- little or no follow-up;
- absence of evaluation;
- no focus on teaching children.

[20] These three positions reflect the administrative focus of *kelompok kerja guru*. Unless the chair has a specifically designated educational role, that administrative focus may persist.

7.2.2. International experience

The collective results of the studies in the international literature on professional learning communities find that well-developed working groups have a positive impact on both teaching practice and on student achievement (Vescio, Ross, and Adams 2008). Well-developed professional learning communities imply that they are well-managed, a consideration pointing to the importance of acting on two different factors when analysing the implementation of CPD: managing a wide range of 'contextual' factors and managing specifically educational factors.

Contextual factors include the human and physical environment of working groups where CPD takes place. A recent study of the cultural context in which teaching and learning takes place in developing countries, is a clear warning that misunderstanding this major factor can be a strong indicator of potential failure (Guthrie 2018). Understanding context factors requires local knowledge (Courtney 2007). INOVASI's approach using PDIA to understand the context is aligned with this finding. Contextual factors must be supportive, not an impediment to teacher learning. Educational factors require that the best opportunities are provided for teachers to learn about supporting student learning.

7.2.3. Indonesian experience

A challenge for INOVASI is to address the evidence that much CPD conducted KKG shows an over-emphasis on maintenance. Maintenance means discussion of administrative arrangements, developing test items, and group cohesion, not professional learning intended to improve learning and teaching (Chang et al. 2014; INOVASI 2017; Sopantini 2014).

An INOVASI study found that KKG did not appear to contribute to improving teachers' competency or students' academic achievements (Akrom 2017). The study found that a KKG was active and conducted various activities with consistently high attendance rates. The participants all considered the group useful. Facilitating elements in implementing activities included the perceived benefits of working with the group, the participants' willingness, commitment, a sense of togetherness and mutual collaboration, as well as the group's professional resources and incentives. However, this KKG also faced constraints: routine administrative topics discussed at meetings; limited professional capacities; lack of follow-up support; lack of time; and geographical challenges to attendance.

7.2.4. Human resource constraints: facilitation and leadership

Two human resource issues limit the operation of KKG. One issue is the professional quality of those facilitating the learning. Facilitators may have limited specialised training for their role, may have been asked to implement unfamiliar educational ideas, and experience difficulty in providing follow-up mentoring (Sopantini 2014). INOVASI seeks to address this challenge by having a well-documented facilitator selection process. A second issue to be addressed is having project staff, with neither professional experience nor formal qualifications in teaching, supervising experienced facilitators. Many facilitators are accomplished and experienced principals or senior teachers.

The quality of those supervising and directly providing CPD for teachers is central to the quality of learning outcomes for teacher-participants in the same way as good teachers are central to successful student learning. The quality of facilitation is a challenge that is not unique to Indonesia. In her review, Kennedy (2016, 973) notes that

There is little discussion in the literature about the nature of Professional Development expertise, how PD providers are selected, how they are prepared for their work, or how their efficacy is assessed. These topics need to become part of our discussion as we generate and test our PD theories of action.

The second human resource constraint is the weakness in educational leadership in working groups and at the school level. Leadership is a crucial school-based factor in promoting teacher professional learning (Reid, Kate; Kleinhenz 2015). Selecting, developing and rewarding the very best facilitators and school leaders is an essential and non-negotiable strategy to achieve sustainable benefits at scale, as well as minimising the risks of failure.

7.2.5. Teachers' *learning* groups – the *kelompok belajar guru*?

The widespread and increasing use of the word 'learning' in the international literature on CPD and communities of practice is unmistakable. 'Teacher learning' and 'professional learning communities' are examples of this trend. The subtle switch in current writing from 'teaching and learning' to 'learning and teaching' is another example of this trend to prioritise learning.

Is it time to advocate for the replacement of the word 'working' in teachers' working groups? One word – learning – would serve as a deliberate strategy to shift the focus of activities in *kelompok kerja guru* away from their limiting focus on work-related administrative matters to matters of continuous professional learning, that is, in *kelompok belajar guru*, the teachers' *learning* group. The shift would be consistent with the original purpose and organisation of KKG, in about 1988, for the professional support of teacher learning (Malcolm 2001, 13).

If that proposal is considered too radical, then teachers' teaching group would still be an advance on current practice that now implicitly prioritises work and administration over learning and teaching.

8. Educational development and teachers' work

Chapter abstract

Summary:

To understand how teachers approach their professional development, it is essential to understand the context in which they work. That context can be understood by examining teacher management in terms of those factors leading to teachers' dissatisfactions at work and those that motivate teachers. Educational leaders need to address two matters. First, they must address factors in the working environment that contribute to teachers being demotivated. Second, leaders need to provide for intrinsic motivators of behaviour at work. Motivators are having a working environment where teachers are able to achieve to their best, providing opportunities for teachers to take genuine responsibility for their work and its outcomes, receiving recognition for achievement, and opportunities for professional and personal growth. CPD can support sound management in strengthening these motivators. Addressing these factors is a significant leadership challenge. What is also important is that local cultural issues are addressed. Using the PDIA approach to analyse the root-causes of local issues in teacher management is central to addressing these challenges.

Key concept:

Teachers' motivation to work is achieved by concurrently managing two factors: first, by enhancing those factors known to increase motivation, and second, by eliminating those factors that are barriers to teachers' professional work and learning and that create work dissatisfaction and de-motivation.

8.1. Understanding the context of teachers' work

Teachers' work, including their professional development, occurs within the cultural and social context of the school. That context demands attention if we are to know how and why CPD works or does not work. Discussions of context commonly imply that the context is 'out there', in the wider society, and external to what the teacher does. But a different consideration of context is warranted (Koffeman and Snoek 2019). Context needs to be understood as the teacher's interactions within their professional context and their work context. Both can provide a rich source for professional learning, an idea that is built into the concept of cycles of learning through inquiry (Timperley 2011).

It is essential to understand the context of teachers' work if we are to analyse what teachers do and why, and how they approach their professional learning. In Indonesia, progress in understanding the work context is being made in studies of teacher absenteeism. School's working conditions are known to influence teachers' decisions about the most basic consideration of whether to go to work or not (Suryahadi and Sambodho 2013).

8.2. Teachers' work and the motivation-hygiene theory

Why do teachers go to work? Why do others absent themselves? What do they experience at work? And why do some go out of their way to initiate, implement, and disseminate innovative practices to improve teaching, as both Arlianti and Shaeffer (2019) and the case studies in Chapter 10 illustrate for East Java?

A durable and influential study of working conditions by Herzberg and his associates provides a two-factor theory to guide the development of answers to these questions (Herzberg, F. Mausner, B. and Snyderman 1959). Table 8 illustrates their two-factor theory, together with examples from teachers' work drawn from this study[21].

The first factor to consider is those things that cause satisfaction and hence the motivation to work. The second factor is those characteristics of work that lead to dissatisfaction, present barriers to achievement, and possibly contribute to the levels of dissatisfaction and absenteeism that plague Indonesian education. Herzberg developed his two-factor, motivation-hygiene theory to assist in answering the questions asked here, using the term 'hygiene' to help understand and 'clean-up' the working environment.

Table 8: Herzberg's Two-factor, Hygiene – Motivation Theory

Sources: Hygiene – Motivation Factors developed from: Herzberg, F. Mausner, B. and Snyderman (1959) and Hagedorn (2004). Examples are developed from this study.

Hygiene factors	Motivation factors
Employer's policies. Quality of supervision. Relationships. Work conditions. Salary. … leading to dissatisfaction at work.	Achievement. Recognition. The nature of work itself. Responsibility. Advancement and growth. … leading to motivation at work.
Hygiene – Motivation factors Examples of teachers' work and CPD from research and INOVASI's experience	
Employer's policies: teacher incentives appear to have small effects on children's learning outcomes; teacher certification and increased income strategies mean teachers rely less on holding a second job and report decrease in problems in supporting families (Chang et al. 2014, 113; Snilstveit et al. 2016). Inappropriate teacher placement (Arsendy 2019). Work conditions: Lack of funds, loose schedules, transportation difficulties are constraints to working group attendance (Sopantini 2014).	Achievement and recognition: Opportunities to share outcomes of innovative teaching practices and learning from INOVASI pilots with colleagues (Case studies, Chapter 10; Arlianti and Shaeffer (2019)). Teachers demonstrating their work at local, provincial and national displays and educational events. Teaching awards. Articles and stories in newsletters. Local and academic publication. The nature of work itself: deeply engrained views about the nature of work as dutiful civil servants has led to status quo maintenance and prevented many individuals at all levels of the system from altering their professional behaviours (Bjork 2004). Teachers'

[21] The two-factor theory is explained and critiqued here: https://en.wikipedia.org/wiki/Two-factor_theory

Need to ensure CPD promotes learning rather than adding 'noise' to work environment' (Kennedy 2016, 974). Relationships: Positive qualities of relationships among teachers in working groups facilitates their functioning and sustainability (Akrom 2017; Sopantini 2014). Good supervisor and peer relationships and support at work aid the transfer of learning (Blume et al. 2010, 1096).	motivation to engage in CPD, and to follow-up and transfer their learning in schools, is improved the more student engagement, and evidence of improved learning (Timperley 2011). Responsibility: Facilitators and teachers initiating dissemination activities within their school, to other schools, and beyond. Advancement and growth: willingness to participate in working groups, INOVASI pilots; undertaking higher degree studies.

Herzberg illustrates the idea of hygiene by using an analogy from public health. Cleaning-up the environment – addressing factors such as removing rubbish, providing sanitation and immunisation – does not make people healthy, it stops them from being unhealthy. Similarly, cleaning up the working environment will not necessarily make teachers satisfied and motivated, but eliminate or reduce the sources of dissatisfaction that lead to demotivation. Cleaning up the working environment to reduce dissatisfaction, by focusing on the hygiene factors, means having good working conditions, positive working relationships[22] with supervisors and colleagues, and an appropriate salary. The motivation to work, however, comes from an entirely different set of factors. These factors include achievement, the nature of work itself, responsibility, recognition, advancement, and personal growth – factors to which CPD can make significant contributions.

8.3. Reducing the risks to teachers' professional learning

How can these ideas of eliminating barriers and cleaning-up the environment where teachers work be applied? Applying this thinking to the context in which teachers come together in teachers' working groups will not necessarily make them better learners and better teachers. It will reduce the risks of them failing to attend, not being able to learn, and then not transferring their learning because of hygiene factors.

Indonesian research has detected examples of poor hygiene factors detrimental to teacher-learning in teachers' working groups . Examples include teachers who cannot attend meetings because of distance or family responsibilities; the necessity of having a second job thus limiting time for participation in CPD; teachers who receive no financial compensation for their travel and expenses to attend teachers' working group meetings; and some teachers who may not have been paid their salaries. In schools, working with inadequate support and supervision are barriers to the transfer of learning to classrooms. These hygiene factors can prevent teachers from having the opportunity to learn and develop as professionals.

The fundamental principle that comes out of this thinking is elementary, yet it is so often neglected in educational development. That principle is that the first step in reducing risks to professional development is to clean-up the environment in which teachers learn and teach. Doing so is unlikely to lead to better teaching and learning outcomes. Better outcomes arise

[22] Relationships are also of critical importance between students and teachers. This relationship has one of the very highest effects on student learning outcomes, according to an analysis of over 1200 meta analyses by Hattie (2009).

from a different set of factors, the motivators, as discussed here. Fixing the hygiene factors, however, does not motivate people, it reduces the risk of them being demotivated.

Several hygiene factors have received attention in Indonesian education (Jalal et al. 2009; Chang et al. 2014). Building constructive relationships through the mechanisms of school-based management and community participation is one of these (Heyward, Cannon, and Sarjono 2011). Better teaching and learning outcomes depend on a range of factors linked to understanding human behaviour. Paying teachers more or providing them with good facilities is unlikely to lead to increased motivation, teaching performance, and better student learning outcomes as so often believed. It will only remove a set of hygiene barriers that are inhibiting teachers' motivation and blocking or frustrating their capacity to do their work properly.

The World Bank study demonstrated these hygiene factors when researching the impact of certification and associated professional allowances for Indonesian teachers. Because of certification and increased income, teachers relied less on holding a second job and reported a decrease in problems of supporting their families. However, there was no evidence of them participating more in teachers' working groups activities, teaching more hours, or self-reporting being absent less often (Chang et al. 2014, 115). International evidence supports this finding. This evidence shows that teacher incentives appear to have small effects on teachers' behaviour and children's learning outcomes (Snilstveit et al. 2016). These findings are unsurprising as incentives tend to focus on hygiene factors alone while ignoring the other side of the equation of work satisfaction, the motivators, that lead to professional outcomes in improved learning and teaching.

The North Maluku schools study demonstrates these hygiene-motivation factors. A lack of funds, loose schedules, and transportation difficulties were immediate constraints to teachers' working groups attendance. In contrast, motivation issues such as building a sound conceptual basis for professional development were not recognised (Sopantini 2014). One positive hygiene factor was the quality of relationships among teachers in their working groups. Teachers, principals and supervisors reported that they enjoyed the opportunity to meet with colleagues and appreciated the need for professional development. Thus, most attended teachers' working group meetings.

The evaluation of an Indonesian school principals' CPD pilot also reveals perceptions of barriers to the application of learning from participation in principals' working groups activities (AusAID 2013). The most significant barrier was the quality and attitude of teachers at principals' schools. Yet, it might be expected teachers being considered a barrier is, in fact, a central reason for the CPD for principals in the first place, and an opportunity for learning and change.

Hagedorn (2004) has applied this hygiene-motivation thinking to education. Her empirical work supports Herzberg's approach and provides a clear structure for the analysis of job satisfaction.

8.4. Addressing teacher motivation

A critical contextual consideration in CPD and in the operation of teachers' working groups is the motivation of those who participate. A review of more than 1,300 research papers addressed the effect of teacher CPD on student learning outcomes. The review identifies the importance of teacher motivation, belief, and skills to transfer professional development to

classroom teaching, supported by on-going school collaboration and follow-up consultations (Yoon, et al. 2007).

Educational leaders have to clean-up the working environment to prevent teachers from being unhappy and demotivated – the hygiene factors. Leaders also need to provide for intrinsic motivators of behaviour at work: being able to achieve, providing opportunities for teachers to take genuine responsibility, receiving recognition for achievement, and opportunities for professional growth. CPD can provide for the strengthening of these motivators.

Arsendy (2019) discusses the hygiene issue of appropriate teacher placement that INOVASI is addressing. Students' mother tongue presents the challenges:

> Despite the large number of local languages in Sumba, many early grade teachers don't use local languages in the classroom. In some schools, teachers are recruited from other areas of Indonesia but are still required to teach students in early grades, and as such cannot be expected to have already mastered the local language. On the other hand, the teachers who do use local languages in the classroom often have little training in the teaching of second languages, and have little strategy or purpose in their use of local languages.

Addressing hygiene factors can be described as a necessary but insufficient criterion to effect changes in learning and teaching.

Finally, there are deeper cultural forces influencing teacher motivation that must be considered. Educational leaders, whether they are government officials, principals, or educational developers, who do not account for these cultural forces in their professional practice, are likely to be ineffective. For example, if teachers see their job as primarily enforcing state policies, rather than helping students to learn, not much will change, as Bjork (2004) has so effectively demonstrated in East Java schools. Comparable challenges to educational change emerged in the study of teachers and schools in Maluku (Sopantini 2014). A common practice treats culture, whether it is organisational culture or inter-generational culture, as a barrier to change to be 'fixed' rather than a root cause of teacher and student behaviour that needs to be acknowledged, understood, and worked with rather than against (Guthrie 2011, 2018). PDIA acknowledges the influence of culture and offers a better way of understanding these forces and a far better way towards change than the simplistic and the unproductive deficit model of thinking described in Chapter 4.2.3.

8.5. Hygiene factors, equity and social inclusion

Hygiene-motivation thinking has potentially helpful applications for both teachers and students. Timperley and Alton-Lee (2008) cite research noting that hygiene factors including poverty, nutrition, family and social issues such as violence, influence children's learning and well-being.

An Indonesian study on issues around the transition of students from primary to junior secondary schools identifies specific school, family and community issues that require close attention and caring management to support quality learning outcomes. The safety of children, inclusion, and their well-being are critical concerns, but these are frequently ignored (Cannon and Arlianti, 2009). There have been successful efforts in educational development programs in Indonesia over many years to address these kinds of issues leading to remarkable achievements in terms of equitable access and participation (Rosser 2018).

PART III: SUSTAINABILITY AND SCALE-OUT

9. Achieving the sustainability and scale-out of benefits

Chapter abstract

Summary:

INOVASI presents the concepts of sustainability and scale-out in this way: scale-out is the expansion of practices in the spatial dimension and sustainability is a continuation in the temporal dimension. A literature review and an analysis of emerging evidence confirms that INOVASI's approach is likely to lead to the sustainability and scale-out of benefits from pilots. Reflecting both the existing knowledge about sustainability and the importance of ownership, INOVASI works with local stakeholders to co-design appropriate approaches that address local needs. Then, implementation occurs through *kelompok kerja* guru (KKG), the teachers' working group. Educational principles, and the development principles derived from PDIA, guide INOVASI's approach.

The literature review informed the construction of the research instrument for the sustainability case studies of Pasuruan and Sidoarjo districts in East Java. These cases are discussed in the following Chapter. Data from that instrument, presented in the Appendix, confirms that INOVASI's approaches will likely lead to sustainable benefits at scale.

Key concepts:

Sustainability is defined as 'the continuation of benefits after assistance from a donor has been completed' (AusAID 2005). Four refinements of this definition are introduced. Likely sustainability is an estimate made at or near to a project's completion that benefits will continue after assistance from a donor has been completed. Actual sustainability is a conclusion about sustainability reached after assessing the evidence, two or more years after a project's completion, that benefits have continued after assistance has concluded. Dynamic sustainability is continued learning and the adaptation of the benefits from interventions to achieve continuing improvements and change. Complementary (or supportive) sustainability is the continuation of good practice approaches and resources used from earlier educational development and from the continuity of experienced personnel from that earlier work. Scale-out is the expansion of benefits and practices in the spatial dimension. Scale-out only has significance if improved practices are sustained in original schools as well as schools included in any scale-out. Dissemination (*diseminasi*), a similar concept to scale-out, means that benefits are distributed, available widely, and implemented using local resources beyond the original development sites.

9.1. Challenges to achieving sustainability and scale-out

INOVASI's theory of change shows districts scaling out successful practices as one of three Intermediate Outcomes from the program. INOVASI's approach is to link the concepts of sustainability and scale-out. Scale-out is the expansion of practices in the spatial dimension and sustainability is a continuation in the temporal dimension. Scale-out is only significant if improved practices are sustained in original schools as well as schools included in any scale-out.

Achieving sustainability and scale-out have challenged the development community. The problems presented by sustainability and scale-out begin with fundamental issues of definition. Both are contested concepts. In the literature, there is a disputed number of definitions, and different terms are used in Indonesian adding further confusion. It is essential to be clear about the terminology used as well as its relationship to changing contexts. For example, terms such as scale-out, scale-up, scale-deep and scaling impact are used in Western academic and development literature (McLean and Gargani 2019) yet the Indonesian term *diseminasi* is common among Indonesian educators.

Even though most Indonesian respondents in a study claimed to have heard about sustainability, only a few could explain it, according to Jessyca (2013). The Indonesian *sustainabilitas* implies that the concept has been imported from the English language. It is not clear whether anyone has taken the trouble to ensure that the concept of sustainability, *sustainabilitas*, or the more common word *keberlanjutan* (continuity) is part of the general understanding and experience of the intended beneficiaries.

Local variations from standard, Western, definitions and implementation ideas are a warning that attempts to move educational ideas across cultural boundaries are fraught with risk. Luke (2011) shows that educational policy does not travel well across cultures, a position explained at length by Guthrie (2011, 2018) and identified in Indonesia (Sopantini 2014). In support of the principles of PDIA, Luke argues for 'principled policy borrowing', depending on a thorough analysis of the whole education system, cultural practices, and demography.

Indonesian discourse, being different, needs to be respected if we are sincere about respecting local customs and culture. For example, Fanany, Fanany, and Kenny (2011) show that Indonesians often see the outcome of capacity building activities as a personal benefit rather than something that also accrues to the broader institution of education.

If we do accept the importance of culture, then local terminology must be respected and used as a basis for discussing change and development. Accordingly, dissemination (representing the Indonesian *diseminasi*) is used in the East Java case studies presented in Chapter 10 where individuals or small groups undertake dissemination activities. Dissemination means that good practices and benefits are distributed, available widely, and implemented using local resources beyond the original development sites (Cannon 2010, 17). Scale-out is used in the more general discussion, particularly when government and non-government partners work to increase the number of beneficiaries with their funds (INOVASI 2019f).

References to sustainability are standard in ecological and social discourse. The word has become a slogan with compelling, moralistic overtones. The focus of interest in this study, however, is 'the continuation of benefits after assistance from a donor has been completed' (AusAID 2005). This study uses that AusAID definition taken from its sustainability guidelines.

The study of sustainability in educational development is seriously under-developed. There has been inconsistency among the major donors in their definition of sustainability and the principles of working towards achieving sustainability of benefits are unclear. In Indonesian educational development, there is limited evidence of donors having achieved sustainable benefits from almost 50 years of development assistance (Cannon 2017).

The challenges of sustaining benefits are sufficiently manageable that a modest investment of resources would have resolved those challenges at least 20 years ago when AusAID was supporting excellent, evidence-based practice in sustainability based on its published guidelines (AusAID 2005). One early example of this practice, and largely forgotten since, was in AusAID's Nusa Tenggara Timur Primary Education Partnership (NTT-PEP) that began in

2002. Their model integrates many of the ideas found elsewhere in this present study. Factors considered critical to ensuring sustainability included:

- grounding activities in local contexts;
- identifying and considering socio-economic and gender factors;
- ensuring policy fit – matching activities to national and local policies using appropriate technology and methods;
- equity – securing benefits for all stakeholders;
- ensuring participation;
- developing individual, community and organisational capacity – taking account of the capacity of the district education office, key institutions, and communities;
- enhancing skill levels and capabilities;
- sustainable financing mechanisms (Cannon and Arlianti 2008, 88).

Belated is better than never, and INOVASI's work is now advancing thinking and practice. The move away from static idea of simply sustaining, maintaining, institutionalising, or continuing benefits bestowed by a donor towards the concept of 'dynamic sustainability' – the capacity for ongoing improvement – is an example of this advance in thinking (Chambers, Glasgow, and Stange 2013). Another significant development has been to link the ideas of sustainability and scale-out (INOVASI 2019e, 6).

9.2. INOVASI's approach to sustainability and scale-out

This study outlines what we know about sustainability from INOVASI's evidence and presents the technically, politically and culturally well-grounded strategies followed by INOVASI. The evidence is demonstrated in the two case study districts of Pasuruan and Sidoarjo in East Java.

INOVASI's approach firmly embeds sustainability in related ideas of local ownership, local solutions to local problems, and scale-out (INOVASI 2019b). INOVASI defines scale-out to mean that the Indonesian government and non-government partners increase the number of beneficiaries with their funds (INOVASI 2019f). Scale-out means expanding beyond existing sites, usually from a single school to other schools and districts. The literature on 'scale' is crowded with related terms, such as replication, dissemination, transfer, mainstreaming, and institutionalisation (Cannon 2010). Now, adding further complexity, there is scale-out, scale-up, and scaling-deep (Pakula and Blackwood 2018; McLean and Gargani 2019).

The East Java case study schools reveal a departure from the INOVASI conception of scale-out presented in the theory of change (Figure 1), with its focus on organisational actors – the government and non-government partners. The term *diseminasi* (dissemination) used in schools and districts describes a contrasting and informal strategy of going to scale where enterprising teachers, principals and facilitators undertake *diseminasi* within their schools and sometimes beyond at the local level.

INOVASI believes that scale-out is meaningless without sustainability as they are interdependent. Coburn (2003) argues that going to scale is only significant if change is sustained in both the original and subsequent schools. INOVASI's scale-out strategy is thus also a sustainability strategy. INOVASI also seeks to achieve sustainable change by scaling-up to the functionality and culture of government and education. Where mindsets and understandings are changed, 'scaling deep' is used to indicate where new ways of thinking and working are embedded and broadened (INOVASI 2019e, 5).

9.3. Which approaches are likely to sustain and scale-out – and why?

9.3.1. Does the evidence support INOVASI's approach through PDIA?

PDIA principles guide INOVASI's approach to sustainability. Set out in *INOVASI scale-out: a strategy for scale-out and beyond* (INOVASI 2019e), the three principles are:

- simple, affordable, sustainable and scalable activities;
- problem-driven iterative adaptation (PDIA);
- ability, authority and acceptance.

9.3.1.1. Activities are simple, affordable, sustainable, and scalable

The INOVASI approach seeks to ensure that activities should not be expensive or too technically advanced to scale-out. The sustainability case study evidence is that pilots do meet the criteria of simplicity and affordability. However, problems emerge with the sustainable and scalable criteria where districts do not have sufficient capacity to support going to scale (Bautista 2019). In short, pilot activities that do meet design criteria may ultimately fail because of implementation and management capacity. As Bautista (2019) argues, it is necessary to analyse the intervention in relation to local capacities and to understand the difference between multiplying an intervention and modifying it to reflect local realities. The process of modification necessarily draws on local capacity for ongoing improvement that is built upon deep understanding and a mindset of continuous learning (Timperley 2011, 164).

9.3.1.2. Problem-driven iterative adaptation (PDIA)

INOVASI expects scale-out to evolve from the original pilots to address local needs. Case study evidence from Pasuruan and Sidoarjo suggests there is evolution. Teachers and groups of teachers are undertaking dissemination within their schools and the teachers' working group using their initiative and local resources. This dissemination is ad-hoc and informal rather than reflecting an agreed strategy based on careful analysis. The absence of a clear, strategic approach to developing, implementing, disseminating and sustaining better practices is also noted in INOVASI's East Java study of innovative good practices by Arlianti and Shaeffer (2019).

9.3.1.3. Ability, authority and acceptance

To provide the conditions for scale-out, INOVASI expands the 'change space', the intersection of technical ability, political authority, and cultural acceptance – also known as the 'triple-A factors' (Andrews et al. 2015, 158). Traditional educational development has focused on building technical *ability*. Without the *authority* to adopt these practices, and without *acceptance* of new practices, sustainability and scale-out have frequently not occurred after the withdrawal of program support (Sopantini 2014).

Technical ability is evident from classroom observation of teaching in case study schools and using literacy and numeracy principles learned during INOVASI pilots.

Authority is more than political authority, which can be a limiting idea. Authority is evident in three forms, political authority, regulatory authority, and professional authority.

Political authority and support are notoriously inconsistent. Authority varies over place and time, according to personalities, and local political priorities. In Sidoarjo, political support in late 2019 was weak, whereas in Pasuruan, stronger political leadership was being provided by an enthusiastic *Wakil Bupati* (Deputy Regent). In the short term, to ensure continuing authority, INOVASI and its partners pay constant attention to building, maintaining, and developing relationships. 'Paying attention' is a factor in sustainability as well as a form of risk management. In the longer term, building, maintaining, and developing relationships is a matter for professional educational leaders to address. Ultimately, political authority is a matter outside the control of INOVASI but not outside the realm of building awareness of its importance.

Regulatory authority exists at two levels. First, there is national-level regulatory authority. This authority exists in the agreement between the governments of Indonesia and Australia for the project. Regulatory authority also exists in national regulations. Second, there is the regulatory authority deriving from district governments adopting policies to sustain change. The existence of district-level regulations and legislation is a compensatory and more enduring buffer to the variability of political authority. INOVASI continues to respond to invitations to assist national ministries, districts, and villages in the development of policies and regulations supporting education (INOVASI 2020).

Professional authority is mostly in the hands of school supervisors and principals. There are two kinds of professional authority. One is formal administrative authority, vested in supervisors and principals. Administrative authority is demonstrated when teachers participate in CPD and they are granted the authority to transfer their learning to schools and to make continuing and beneficial changes in support of improved student learning. The other kind of authority is educational authority, derived from a blending of knowledge and expertise, formal professional qualifications, and demonstrable capacities such as principals demonstrating and advocating effective teaching methods.

Case study schools visited in East Java revealed strong and weak forms of professional authority. Strong authority is indicated among those principals who actively 'lead from the front' by creating opportunities for teacher-learning, by regularly visiting classrooms, mentoring, and by recognising and celebrating good teaching and learning outcomes. Principals demonstrating weak authority may respond positively to teacher demands for CPD and school change, and support what these teachers wish to do in their schools, but do not otherwise display strong leadership or initiative. In one case study school, this form of weak principal authority was compensated for by the school-based activities of a strong, pro-active, school supervisor.

Acceptance is a fundamental requirement for successful implementation, sustainability and scale-out as Guthrie (2011, 2018) has demonstrated. Cultural acceptance is addressed at two levels. The first level, as the theory of change illustrates, is local problem identification, analysis and preparation. The second level is through pilot implementation by using local and experienced facilitators. In the East Java case study schools, cultural acceptance is evident in the implementation of good practices in literacy and numeracy, teacher, principal and facilitator enthusiasm, and in local initiatives to disseminate and scale-out good practices in schools and beyond.

9.3.2. Does research evidence support INOVASI's approach?

Evidence supporting INOVASI's approach to sustainability and scale-out comes from the international and Indonesian literature and the evidence from INOVASI's implementation reports and the case studies discussed in Chapter 10. Two sources that synthesise international research and experience are considered below. The first is the analysis of the evidence of the effectiveness of school reform by Coburn (2003) and the second, the work of Timperley and Alton-Lee (2008, 361) who discuss the empirical evidence.

Coburn concludes that the success of policy interventions is likely to depend on:

- spread;
- depth;
- sustainability;
- shift in reform ownership.

The following analysis of her research is structured according to the PDIA 'triple-A factors' introduced above, and in understanding the 'change space'[23].

9.3.2.1. Evidence for ability

Coburn's concept of depth is aligned with teachers' knowledge and ability. Depth, knowledge and ability are also aligned with the idea of continuous professional development so that abilities are both maintained and advanced. The important concept of advancing abilities is embedded in the concept of 'dynamic sustainability' (Andrews, Pritchett, and Woolcock 2017).

To go to scale requires deep change in classroom practice. Deep change goes beyond surface structures or procedures such as changes in materials, classroom organisation, or children's activities. It is change that alters teachers' mindsets and their beliefs about learning and teaching.

In a model of teachers' beliefs-knowledge-practices produced through a study of grade 8 mathematics teachers in Indonesia, teachers are shown to be most effective when their teaching practices align with their levels of knowledge in teaching and beliefs. When this happens, they are operating in a 'congruence zone'. They are least effective when they use practices that are not aligned with their knowledge or beliefs, or when they are operating in a 'dissonance zone' (The World Bank 2015, 133). Beliefs include assumptions about how students learn and how to teach, the nature of subject matter, expectations for students, and what effective teaching is (Coburn 2003, 4). Beliefs also reflect the PDIA concept of acceptance.

The concept of depth has support in the research literature on student learning and educational development (Cannon 2012) and from the experience of CPD reported in the 'best evidence synthesis' of research by Timperley et al. (2007). The best evidence is that improved student outcomes are sustained where:

[23] 'The change space is contingent on contextual factors commonly found to influence policy and reform success, shaping what and how much one can do in any policy or reform initiative at any time' (Andrews, Pritchett, and Woolcock 2017, 158). To provide the conditions for scale-out, INOVASI works to expand the change space which is the intersection of technical ability, political authority, and cultural acceptance.

- CPD had a focus on developing teachers' pedagogical content knowledge in enough depth to form the basis of principled decisions about practice;
- CPD included evidence-based skills of inquiry so that teachers could identify the next teaching steps to test if changes were having the desired impact on students' learning;
- Teachers had the organisational support of their schools (that is, authority and acceptance).

Depth is essential in schools' and districts' capacities to sustain change. Teachers with a deep understanding of principles are better able to respond to changing contexts in ways that are consistent with the principles of the change they are implementing.

Timperley argues that sustainability is not about the maintenance of changes that arise from participation in one cycle of learning activity. Sustainability must also face the demanding test of depth. Depth is ongoing improvement built upon teachers' mindset of continuous learning.

> It is not a case of learning then sustaining what is learned. Rather, it is a case of ongoing learning, being aware when a situation is so challenging that it means going back to basics, or when all it requires is to refocus what is already known' (Timperley 2011, 164).

Timperley's analysis reinforces two important ideas: first, the idea of *continuous* professional development, discussed in section 4.1.2, and second, dynamic sustainability discussed in section 9.1.

Timperley and Alton-Lee (2008) conclude that sustainability from CPD appears to be dependent on two qualities. The first quality is in teachers' developing a deep, theoretical, pedagogical content knowledge base that serves as the basis for principle-based changes to their practice. The second quality is their deeper skills in enquiring into the impact of their teaching on student learning. The PDIA idea of the adaptive approach is reflected in community of practice-based cycles of inquiry and knowledge-building that can be implemented in teachers' working groups. Reinforcing the importance of this concept, Timperley notes that continuing gains in outcomes for students are more evident in CPD initiatives that develop adaptive expertise than those that do not (Timperley 2011, Loc 2473).

These concepts are deeply embedded in PDIA and in INOVASI's strategic approaches.

9.3.2.2. Evidence for authority

Teachers also need to be working in situations where the organisational conditions authorise collective, evidence-informed inquiry with ongoing opportunities to improve their knowledge. In the international studies reviewed, continued engagement with change and improvement was motivated by teachers' and leaders' taking professional responsibility for identified problems with student outcomes, together with the knowledge they had the authority to do so and the belief they had the capacities to solve them. Better outcomes for students are sustained when the conditions authorise an ongoing evidence-informed inquiry into the impact of practices on students.

Scale-out is a challenge for policy and practice. It requires systemic support from different levels of government who are the primary authorisers as well as continuing support from professional and administrative authorities such as school supervisors. This support is essential for the sustainability of benefits and scale-out. Timperley and Alton-Lee (2008, 361) conclude that

Systemic responses are needed from different jurisdictions whether at national, federal, state, or regional levels. These are critical for sustainable rather than siloed and transitory development in education.

INOVASI's work at different levels of government demonstrates action on this essential, systemic consideration.

Finally, a shift in reform ownership is also necessary to achieve true scale-out. Ownership of the change must shift from an external agency such as the national government or a donor to a reform locally owned by districts, schools, and teachers who have the authority and capacity to sustain and spread reform principles themselves (Coburn 2003). There is clear evidence from the East Java case studies of this kind of local ownership in both districts. An open question is whether districts' technical abilities are adequate to meet the challenges of sustaining and spreading reforms.

9.3.2.3. Evidence for acceptance

One of the necessary strategies for taking reforms to scale is acceptance. Acceptance requires creating the conditions to shift ownership, authority, abilities and knowledge of the reform from external program sources to locally accepted and theory-based practices. If this can be achieved, the reform is not only accepted but likely to become self-generative, says Coburn (2003). In other words, it is dynamically sustainable.

A valid indicator of acceptance is Coburn's notion of spread, the equivalent of scale-out. The spatial spreading of change to more schools is also an indirect indicator of acceptance. However, spread must also involve more in-depth spreading of underlying beliefs, norms, and principles to additional classrooms and schools. Spread is much more than the comparatively superficial spread of activities, materials, or classroom organisation that can mislead the uninformed observer.

One criticism of Coburn's conclusions that are drawn from a North American focus is that they do not directly address the matter of culture. Nevertheless, concepts that INOVASI considers important are Coburn's four dimensions of depth, sustainability, spread, and shift in reform ownership. There is considerable evidence of the face-validity of her insights and conclusions from recent observations of Indonesian schools.

9.4. Evidence of sustainability of benefits in Indonesia

What works in achieving sustainable change in Indonesian education from donor-led interventions is not well-understood. The limited evidence of past practices and outcomes is discouraging. Taking an overall view of educational development project activity in Indonesia, Cannon (2017) identified 91 different educational development projects in Indonesia over 46 years from 1971 to 2017. Only half of the projects were considered to be *likely* sustainable, according to reports from the implementing donors who evaluated their projects at project completion. The *actual* sustainability of benefits from the 22 projects where a follow-up review was conducted some years later, indicates an actual sustainability rate of one-half also. Considering these two findings together, donors' evidence about their own educational development investments in Indonesia is that only one-half of their project work has led to sustainable benefits.

The evidence from donors' reports also reveals a pattern of factors associated with success and failure in the sustainability of benefits. These factors, along with other sources of evidence, have informed the design of the sustainability instrument used in the East Java case studies shown in the Appendix. One of those additional sources is the study of scale-out and sustainability in schools in three Indonesian provinces by Cannon, Arlianti, and Riu (2014). The study concluded that the evidence of factors supporting scale-out and sustainability could be grouped as follows:

> Local ownership of reform: a move away from externally led reforms towards local ownership and management. The quality of change may be better in schools taking initiatives than in comparable project sites. This outcome is because of locals knowing their context, being known in schools, having some local control of change, and sharing responsibilities for quality outcomes.
>
> 'Bottom-up' commitment: schools use their own funds and are volunteering to participate in CPD activities; 'sideways-in' pushes by strong teachers' working groups and school committees.
>
> A change in the 'mindset' of the education profession: the strength and quality of social capital represented by understanding and attitudes; the political will to improve education; the quality of educational leadership; and the strength of educational organisations.
>
> Schools: consistent reporting of improved student outcomes in schools: evident enthusiasm for learning; increased teacher and student motivation; improved attendance, social skills and academic outcomes; high levels of satisfaction with changes by students, teachers, principals, parents, and school committees.
>
> Transitional change: the pattern of change in schools is transitional from one or a few teachers changing and then all teachers changing over time; visible evidence of change in physical infrastructure, improved grounds and gardens, teaching equipment and materials.
>
> District Government: Local education officials routinely reporting a background in education as a school principal or teacher (unlike the past when they often had no professional background in education at all); commitment to scale-out reflected in joint planning with projects, joint appointment of facilitators; assuming responsibility for funding and commitments to improve the quality of education as reflected in policies and regulations; planning for sustainability integrated into long-term plans.

These findings help to understand what works in achieving sustainable change in education. The findings have also informed the construction of the broad set of indicators to guide the observation and analysis of sustainability and scale-out shown in the Appendix.

9.5. Plateaus and fade-out: challenges to sustainability and scale-out

In their review of what works to improve learning in developing countries, Evans and Popova (2016) note a focus on short-term learning outcomes and that educational gains are often not sustained. Jacob, Lefgren, and Sims (2010) show the fade-out of student learning gains in mathematics and reading within one year in the United States. In South Africa, a study of early

grades reading also reports on fade-out and discusses the complex interactions between CPD methodologies, sustainability and scale-out (Cilliers et al. 2019).

A precursor to students' learning gains fading-out is the related idea of changes in schools 'plateauing'. Education projects in Indonesia note this phenomenon. Plateauing is where a level of new capacity is achieved but with no corresponding capacity to deepen, sustain, or scale-out change. In other words, there is no dynamic sustainability. This phenomenon is noted in the final evaluation of USAID's MBE – Managing Basic Education project (2003 – 2006) where:

> …gains appear to have reached a 'plateau' in schools that have received all of the PAKEM modules. There is the risk therefore that further improvements may not occur, or the gains made to date may not be sustainable in the long term if some corrective measures are not adopted' (The Mitchell Group 2007, 13).

The 'fade factor', is a weakness in the development process. The evaluation of USAID's Decentralized Basic Education project explains the situation as follows:

> Weaknesses: High short-run/low long-term impact. Despite the initial high impact in terms of community involvement the DBE1 training provided, the impact faded over the life of the program for a variety of reasons but largely because the people trained were replaced or otherwise moved on. Without the trained personnel, the program quickly wanes (Evans 2012, 23).

Whether similar patterns of fading and plateauing occurs in schools supported by INOVASI and its partner's work remains to be seen. Perhaps the risks of plateauing and fade-out have been minimised as evidenced in the East Java case study districts by the depth of change, the attention to changing mindsets, and the active support of scaling-out, scaling-up and scaling-deep.

A reasonable conclusion is that plateauing and fade-out will not occur in the case study districts. Two factors provide evidence for this conclusion. Both factors reflect ownership. The first factor is the finding from the PRIORITAS sustainability study that a move away from externally-led reforms towards local ownership and management is producing a quality of change that may be better in schools working on their own initiatives than in comparable project sites (Cannon, Arlianti, and Riu 2014). The second factor, which builds on that finding, is that INOVASI's approach relies on local ownership from the very beginning as a principle in its approach, a principle reflected in the evidence throughout this study and in INOVASI's theory of change.

9.6. Complementary or supportive sustainability

Past educational development projects have contributed to INOVASI's development, testing, and consolidation of good practices. This contribution has informed INOVASI's work and upon which it has been able to build and add value, rather than 'reinventing wheels' or 'starting from scratch'. Past projects date back to the British project, *Cara Belajar Siswa Actif* (commonly known as CBSA or the Student Active Learning project) implemented from 1980 to 1995. CBSA fostered the critically important local institution, the *kelompok kerja guru* (KKG), the teachers' working group, and pioneered the progressive educational idea of active learning in Indonesian schools.

Drawing on past project experience illustrates a supportive or 'complementary' form of sustainability. Whereas sustainability analysis commonly focuses on the continuation of benefits from a specific project accruing to targeted beneficiaries – teachers, schools, and governments – there is also the complementary idea of the continuation of good practice approaches used from earlier educational development and from the continuity of the experience of personnel from that earlier work. Good practice approaches originating in CBSA have informed many subsequent projects that have used and extended this very early work. Many of these projects include those receiving Australian support and have included:

- UNICEF's Creating Learning Communities for Children (CLCC) project that developed an integrated approach to school development involving learning and teaching, school management, and community participation;[24]
- AusAID's Nusa Tenggara Timur Primary Education Partnership (NTT-PEP) that had an explicit strategy for sustainability (discussed above in section 9.1)
- AusAID's Indonesia Australia Partnership in Basic Education (IAPBE) with its rigorous approach to cascade training in East Java (discussed above in section 4.2.4).

The phenomenon of continuity of approach demonstrates to government that their policies and systems are respected and being sustainability developed by different donors. Japan's *Regional Education Development and Improvement Program* (REDIP) worked with, and through, existing organisational systems. REDIP did not create new structures that often cease to exist when projects conclude. The original REDIP program found favour with government and was replicated three times (Cannon and Arlianti 2008).

Building on past initiatives has consolidated change, provided good practice examples of what works and why, and accelerated further innovation. USAID's sequence of end-on projects, *Managing Basic Education, Decentralized Basic Education*, and *PRIORITAS* illustrate this process. INOVASI, informed by this earlier work, demonstrates further continuity and innovation, particularly with its application of PDIA and in the flexibility of its adaptive approach. Moreover, in demonstrating continuity from past initiatives, INOVASI is also respecting the context in which it is working. The theory of change (section 1.2) places significant emphasis on recognising and working with existing contexts. Those contexts include the outcomes of past development initiatives, a change factor recognised in the case study presented in section 10.3.

Finally, the continuity of professional personnel support provided by various donors over the years is also a significant and complementary contribution to sustainability. While not neglecting the engagement of new talent that brings fresh ideas and energy to projects, there is an evident continuity of experienced national and international project staff who provide continuity of local knowledge and in-country expertise that forms a defensive barrier to that ever-present risk of development programs wasting precious resources on 'reinventing the wheel'.

[24] UNICEF's Creating Learning Communities for Children had a powerful influence on the design, materials, and implementation of many subsequent projects such as USAID's sequence of end-on projects, Managing Basic Education, Decentralized Basic Education, and PRIORITAS; UNICEF's Mainstreaming Good Practices in Basic Education, ADB's Madrasah Education Development Project, and AusAID's NTT-PEP, IAPBE and LAPIS (Learning Assistance Program for Islamic Schools).

9.7. Conclusion

More than a decade ago, a World Bank review of educational development projects in Indonesia, focusing on the links between development strategies and sustainable benefits, made the following conclusions (Cannon and Arlianti 2008, 13). The conclusions provide a framework reflecting the evidence of INOVASI's practices and emerging outcomes:

Review conclusion 1: Aid effectiveness and sustainability require programs meeting 'pre-conditions'. including program design and management approaches being aligned with the context of decentralisation, being simple in approach, and well-managed.

Evidence: Consistent with decentralised education, INOVASI works with local stakeholders to co-design appropriate approaches that address local needs. Table 9 reflects this evidence, presenting co-designed and context-relevant scale-out interventions prepared by INOVASI and its local partners in the case study districts and the program overall.

Review conclusion 2: Aid is effective when it works with existing communities of practice.

Evidence: Working with communities of practice is fundamental in INOVASI's approach. INOVASI works with local governments and educational organisations, supported by local facilitators, working within the accepted – and demonstrably sustainable – community of practice organisation, the *kelompok kerja guru* (Malcolm 2001; Akrom 2017; INOVASI 2020, 11).

Table 9: Scale-out interventions, July - December 2019

(Source: INOVASI 2020, Six-monthly Progress Report Jul-Dec 2019, Annex 2.)

District	Pilot	Number of INOVASI schools (Note 1)	Number of scale-out schools (Note 2)	Actual spending for scale-out APBD pilots (AUD)
Pasuruan	Literacy 2	8	146	$37,800
Sidoarjo	Numeracy 2	11	284	$19,500
All East Java Program Districts	All pilots	70	593	$108,238
All INOVASI Program Districts	All pilots	158	1068	$751,136

Table notes:

- Pilots are defined as co-designed when local stakeholders have been involved in the initial planning, design, and implementation processes; context-relevant means the pilots identify and address educational challenges at the local district-level or below.
- INOVASI co-designed pilots in which designs are being modified to be context-relevant by local stakeholders with support from INOVASI.
- Local government budget (APBD) and non-APBD scale-out pilots in which designs are being modified to be context relevant by local stakeholders with support from INOVASI.

Review conclusion 3: Project effectiveness is enhanced when it is based on a clear and focused framework built on the principles drawn from education and development.

Evidence: INOVASI draws on educational principles underpinning literacy, numeracy, equity and inclusion, and school leadership. INOVASI draws on educational principles for CPD, as demonstrated in Chapter 4. Development principles derived from PDIA guide INOVASI's approach as does professional staffs' extensive field experience in educational development. INOVASI contrasts with many past education projects that were more heavily influenced by economic and management principles than by education.

Review conclusion 4: Aid is effective when project achievements are sustainable, and when results can be disseminated (scaled-out) beyond the original beneficiaries.

Evidence: Case study evidence from East Java consistently indicates that the benefits to stakeholders from INOVASI's pilot activities are likely to be sustainable. It is too early to know whether the benefits will be actually sustained; an assessment that requires the passage of time. Case study evidence, and INOVASI's records summarised in Tables 9 and 10, show that scale-out is occurring from the original beneficiary sites (INOVASI 2020, 9). Scale-out is a positive indicator that sustainability will also occur.

Indicative of local ownership across all districts of the scale-out of piloted short courses is evidence provided in INOVASI's most recent six-monthly report (July – December 2019). That evidence is summarised in Table 10, below. The primary source of funds for scale-out has been from district budgets with additional funds from schools' operational funds, industry and business, non-governmental organisations, village budgets the Ministry of Religious Affairs and from teachers' allowances. Most districts have budgeted for further scale-out of pilots in 2020. (INOVASI 2020, 9).

Table 10: District scale-out of pilots, July - December 2019

Source: INOVASI (2020)

Province	District	Pilot name	Number of target schools
Jawa Timur	Kota Batu	Literacy 2	24
	Pasuruan	Literacy 1	146
	Probolinggo	Multigrade	13
		Inclusion	24
	Sidoarjo	Numeracy 2	284
	Sumenep	Literacy 1 & Numeracy	102
Kalimantan Utara	Bulungan	Literacy 1	125
	Malinau	Literacy 1	14
Nusa Tenggara Barat	Bima	Literacy 1	21
	Sumbawa	Numeracy 2	15
	Sumbawa Barat	Guru *BAIK*	25
	Dompu	Literacy 1	54
	Lombok Tengah	Guru *BAIK*	11

Province	District	Pilot name	Number of target schools
		Inclusion	16
	Lombok Utara	Literacy 1	20
Nusa Tenggara Timur	Sumba Barat	Leadership for Learning	24
		Literacy 1	Same school
	Sumba Barat Daya	Literacy 1	27
	Sumba Tengah	Literacy 1	40
	Sumba Timur	Literacy 2	83
Total		20	1068

Tables 9 and 10 provide quantitative indicators of scale-out for the program as a whole and the case study districts. What the quantitative data does not tell us is equally important. Three questions cannot be answered from existing data.

- First, is the evidence of scale-out to the numbers of schools shown, and the related expenditures adequate relative to local needs and available resources?
- Second, is the quality achieved during scale-out appropriate to address the learning needs of children?
- Third, what is being done to address risks to sustainability through plateauing and fade-out?

These are demanding questions but need to be asked nevertheless. To the extent they are asked and strategies developed to address them, districts will be implementing the concept of dynamic sustainability and, hopefully achieving longer-term, actual sustainability.

The literature review and analysis has confirmed beyond reasonable doubt that INOVASI's approaches are likely to lead to the sustainability and scale-out of benefits from the pilots. The review has also informed the construction of the data collection instrument, shown in the Appendix. The instrument, used in the case studies of Pasuruan and Sidoarjo and discussed in the following Chapter, has produced data that confirms INOVASI's approaches will likely to lead to sustainable benefits. The unsustainability indicators, also shown in the Appendix, add to the reliability of this encouraging conclusion.

10. Case studies of sustainability and scale-out

Chapter abstract

Summary:

The size and complexity of INOVASI's program present challenges to the study of sustainability and scale-out. The case study is a method with the potential to address these challenges. Case studies in Pasuruan and Sidoarjo districts in East Java explored sustainability and scale-out in their natural context. The evidence from the case studies indicates five conclusions about the *likely sustainability* and scale-out of benefits from the INOVASI pilots: the benefits from pilots are likely sustainable; sustainability and scale-out are being supported from the 'bottom-up' in schools; the accumulating evidence validates a set of indicators that are necessary pre-conditions for sustaining benefits and scaling these benefits. Overall, the evaluation of INOVASI and its partners' performance against these indicators is positive.

A separate case study of schools explored the *actual* sustainability of benefits from previous development project interventions. The evidence from this small group of primary and junior secondary schools, also in Pasuruan and Sidoarjo, is that there has been actual sustainability of benefits from past development project activities. Why benefits have been sustained is the outcome of interactions among many complex factors and actual sustainability cannot be attributed to one particular factor alone nor to one specific project's intervention.

Key concepts:

The case study as a method used to investigate phenomena in-depth and in its real-world context.

The multiple-case study is a design for examining cases that are linked together in the program. Cases contribute to an understanding of the theory of change and how the program works and why. Multiple cases are like experiments that identify commonalities in different settings and that can be generalised beyond those settings conceptually, but not statistically.

10.1. Methodological introduction

The size and complexity of INOVASI's program present challenges to the study of CPD, sustainability, and scale-out. The case study is a method with the potential to address these challenges. Yin defines the case study as a method used to investigate phenomena in-depth and in its real-world context (2018, 286). Yin proposes three advantages of case studies:

- the potential to capture the complexity of implementation in one location (the 'case');
- the capacity to focus on the context, both internal to the case and externally with other cases and factors;
- the capacity to answer the 'why' questions such as 'what works and why?' (Yin 2018, 270).

Case studies consider the phenomena of interest in its context. This yields a large number of variables too numerous and complex for a sampling methodology. Each case is a study in which convergent evidence is sought regarding the facts and conclusions for that case. The case's conclusions are then considered to be the information needing evidence of replication in other individual cases. Case study research is less interested in finding patterned

generalities that emerge from survey research; it is more focused on explaining what works and why for a unique set of context-related circumstances. This focus aligns case studies with the strategy of PDIA.

10.1.1. Multiple case studies

It is desirable to undertake case studies in at least two locations to test the theory of change. The multiple-case study design is a design for examining cases that are linked together in the program. In INOVASI, this linkage between cases is provided through a set of shared program goals and methodologies set out in INOVASI's theory of change, as shown in Figure 1.

Multiple cases provide a bonus. As well as maintaining their primary interest in each case, they also contribute to an understanding of the theory of change and whether the program works and why. Multiple cases do not serve the same function as multiple respondents do in survey research. Surveys follow a sampling logic to be able to generalise to a population. In multiple case study research, a distinguishing difference is that each single case studied is similar to an experiment. Therefore, the analytical logic one of experimentation and replication.

The analysis of cases, or 'experiments', identifies commonalities in different settings. These commonalities can be generalised beyond those settings conceptually, but not statistically (Guthrie 2018, 164). For example, one commonality in the cases studied here is the initiative taken by individual teachers to disseminate their learning to their colleagues within their schools and beyond. We can conclude from this finding that this is a common practice and one that warrants closer attention and possible development and support.

The primary interest in the cases is the contextual implementation of the theory of change, the operation of CPD, and the sustainability of benefits and scale-out. Thus, the uniqueness of each case provides insights into the INOVASI program theory of change. By using multiple cases, it is possible to consider what is similar and different about cases to assist in understanding the program theory better and to test plausible rival hypotheses of what works and why (Yin 2018, xiii).

10.1.2. Case selection

The work of Yin (2018), Stake (2006) and Guthrie (2018) suggest several theoretical approaches to case selection. However, timing, location, and limited resources did not permit analysis of all INOVASI districts to undertake a theoretical approach to case selection. Instead, these constrained circumstances required a pragmatic approach to case selection as follows:

- First, the research focus for the case studies was narrowed to the one domain of the sustainability and scale-out of benefits from INOVASI pilots.
- Second, two case study districts were chosen from East Java to capture the complexity, the capacity to focus on the context, and the capacity to answer the 'why' question about whether the INOVASI pilots work. The districts are Pasuruan and Sidoarjo. This is Case Study #1.
- Third, case selection from East Java with its experience of international development support over many years, best facilitated the study of whether the benefits derived from that past support had been sustainable, and whether there had been any impact on INOVASI's work. This enabled a study of the actual sustainability of benefits over time. This is Case Study #2.

10.1.3. Case study data collection

The case study data collection employed observation of schools and classrooms, interviews and group discussion with beneficiaries in schools, local government offices, and with project staff. INOVASI's documents and data were reviewed. Three major sources of evidence contributed to the construction of the data collection instrument:

- generic works on sustainability and research published by AusAID (2005), Schröter (2010) and Yin (2018);
- the work of Eckman (1993) on unsustainability. Working from the assumption that it is much easier to detect when something is unsustainable than when it is sustainable, unsustainability indicators seek negative information and serve as a reliability check on other indicators used in the instrument;
- studies of educational development and sustainability in Indonesian education (Cannon 2001, 2017; Cannon and Arlianti 2008; Cannon, Arlianti, and Riu 2014).

The literature review also informed the analysis of data from the case studies and development of conclusions.

10.2. Case study #1: Likely sustainability

10.2.1. Contexts

The case studies of the likely sustainability of benefits from INOVASI's pilots are located in the East Java districts of Pasuruan and Sidoarjo.

Pasuruan has a population of 1.5 million people, located about 70 km southeast of Indonesia's second-largest city, Surabaya. The economy is dependent on farming, processing industries, and services. Culturally, Pasuruan is a relatively homogenous district with a population of mostly Islamic Javanese and Madurese peoples, as well as some Christian, Hindu and Buddhist groups. These cultural characteristics are reflected in a strong sense of community in which social networks function well and have a significant role in educational development. Networks include the school cluster system and person-to-person social media networks now being actively used to disseminate teaching ideas.

Schools visited are located in comparatively densely populated areas, and so it is easier for their communities to support their schools. Teachers mostly come from the local area, so there is a degree of stability in staffing. Stability has contributed to sustaining benefits accrued from past educational development support from different donors. One principal described the strong sense of community as illustrating the local cultural concepts of *gotong royong* (cooperation, working hand in hand) and *keterbukaan* (openness and accountability). Both concepts are compatible with the application of the new PDIA approaches to improving teaching and learning.

Pasuruan has been the beneficiary of several donor-supported projects over the years, most recently with USAID's DBE since 2005 and later USAID's PRIORITAS until 2016.

Contextual indicators of a serious commitment to change in Pasuruan are:

- the enthusiastic approach to the study expressed by the district education and religious affairs offices and the coordinated approach to school improvement both organisations are taking;

- full attendance at meetings with the district education and religious affairs offices, the schools visited, and with facilitators where enthusiastic and helpful contributions to all questions asked were provided;
- widespread enthusiasm in schools for INOVASI's literacy and numeracy pilots as reflected in consistently positive responses of students, teachers, principals, supervisors and facilitators to changes in learning and teaching.

Sidoarjo is the smallest district in terms of land area in East Java and part of the vast Surabaya metropolitan region. There is an estimated population of more than 2.3 million people (2014) and a high population density. The local economy is dependent on manufacturing and processing industries, small and medium enterprises, the service sector, and fishing. The population is mostly Islamic Javanese and Madurese people but includes numbers of people and religions from many other regions of Indonesia and Asia, reflecting adjacent Surabaya's long history as a major Asian trading port.

Located in densely populated areas, it is relatively easy for the communities to meet and to support their schools. As in nearby Pasuruan, teachers come from the local area. This is a factor strengthening commitment to their school. This characteristic is significant for sustainability, dissemination and scale-out. First, staffing stability and continuity in one place or area facilitate sustained contributions and a critical mass of experienced teachers in a school. Second, strong local networks facilitate rapid dissemination through direct inter-personal connections. The mechanism for this is frequently the teachers' working group, but increasingly social media networks are supporting this kind of dissemination.

Sidoarjo takes initiatives to scale-out good practices from its resources as well as from its relationship with INOVASI. The overall context in which this is taking place is excellent. District-level leadership and commitment to the scale-out of good practices in teaching literacy and numeracy, principal and teacher enthusiasm and commitment, strong community support, and the support of continuing teacher learning through effective working groups characterise this context in Sidoarjo. The district education office is equitably approaching scale-out by including madrasah in its planning and support. Senior officials are mostly former principals or teachers. Further indicators of a serious commitment to educational development in Sidoarjo are similar to those found in Pasuruan, as well as more widely in East Java (Arlianti and Shaeffer 2019).

10.2.2. Case study data collection

The two key questions asked about sustainability are: (a) is there evidence to show which approaches are likely to sustain; (b) why?

Drawing on the research literature and recent Indonesian project experience, an extensive checklist of indicators was developed to answer these questions. The checklist provided a comprehensive base from which to make informed judgements about the potential or likely sustainability of benefits from INOVASI's implementation of pilots in the two districts. The key themes of that checklist, displayed in the Appendix, are:

- educational;
- governance and management;
- sustainability and scale-out, including indicators of unsustainability.

The results from the two case study districts are presented together in the Appendix. Only significant differences between the districts are noted there, given that there were very strong similarities between them. The reason for combining the findings in this way is that the study

focused on understanding the factors that lead to sustainability and scale-out. An overview of these factors is provided in Table 14. There is an apparent similarity in the processes and evidence of outcomes in these two districts that likely reflect their cultural similarities and proximity.

The following analysis follows the three themes listed above: educational, governance and management, and sustainability and scale-out.

10.2.3. Analysis part A: Educational issues

10.2.3.1. Pilot design

INOVASI's approach to development is distinguished by its strong focus on educational matters. Although not entirely absent, specifically educational matters of learning and teaching were not as clearly at the forefront of thinking in the approaches of many past projects. These were more often concerned with questions of educational management and governance. Evidence of INOVASI's attention to educational matters is reflected in the positive responses displayed in the Appendix. Drawing on that evidence, it is concluded that INOVASI's attention to the design, preparation, and implementation of pilots is conceptually sound and an important contributor to the likely sustainability of benefits. Inspection of documents and interviews confirms the application of recent project experience in the implementation of pilots as well as the considered application of research evidence about 'what works'.

There are gaps that might have be addressed in pilot design. For example, although there are arguments to focus on working with the willing, rather than dissipating resources too broadly, there are practical factors preventing coverage of all possible design factors such as this one.

10.2.3.2. Pilot implementation

Effective and efficient pilot implementation is something of a 'black box'. This is because it is never clear exactly what happens inside that box when pilots are being implemented – what the quality of teaching and mentoring is like, who is present, or what the true reaction and learning of participants may have been. One way of addressing this challenge is to minimise risks of failure through the quality of design, preparation, and supervision. The Appendix documents INOVASI's attention to these challenges.

Common mechanisms to address the 'black box' challenge are good quality professional development for the role of facilitators, adequate support for implementation and transfer, and sound quality assurance mechanisms. These essentials are often weak or absent, even in the most advanced education systems and in the best schools. So it should come as no surprise that they may be relatively weak in the case study districts. There have been attempts to address these matters, including formative reviews of facilitators, but this has since been abandoned as impractical with the limited resources available.

The evidence provided by principals, teachers and project staff about pilot implementation is positive in both case study districts. A weakness noted by a small number of pilot participants was that some facilitators were a fragile link in the chain of events from design to outcomes, a weakness visualised in Figure 5.

Figure 5: Pilot implementation, transfer, support - weaker links in the chain?

Design and preparation | Implementation, transfer, feedback & support | Needs & demand for improved outcomes for students

Notwithstanding these weaknesses, the evidence often showed enthusiastic and professional facilitators, often taking initiatives to disseminate their understanding and skill in literacy and numeracy beyond the pilots. Another key finding about implementation is that it was positively evaluated for the way it addressed local conditions and needs. The feedback from teachers, principals, supervisors, and government officials in both districts was uniformly positive about this criterion.

Overall, the evidence shows that INOVASI has made a significant advance in the design and implementation of CPD to improve teaching and learning.

10.2.3.3. Transfer of learning

If change is to occur in teaching from learning during pilot implementation, then teachers must successfully transfer their learning from the pilots to their classroom practice. It is evident in these case studies that many teachers, perhaps the majority, do transfer their learning. It is also evident that others do not, or cannot. Evidence of this breakdown is varied. In one case, this was because of unsatisfactory pilot implementation. In other cases, the failure to transfer is related to poor teacher motivation, or teachers working in unreceptive schools.

By way of contrast, transfer can skip directly from one school participating in a pilot to another via the dedicated leadership of a school principal. The principal, teachers, and a facilitator present in one case study school demonstrated the change made in a non-pilot school as follows:

- Educational leadership: The principal's educational leadership as evidenced by participation in training and higher degree studies, support for her teachers, and her capacity to lead analysis of change processes in the school. Her planning is to create a 'Literacy Team' comprising trained teachers to support others.
- Commitment: The principal further demonstrates a strong commitment to making improvements and expects reciprocal commitment from teachers. She works hard to achieve commitment from the wider community, especially from parents.
- Networking: With no funds to pay visiting experts, this principal uses her network to arrange visitors to contribute their time freely to CPD for teachers.

10.2.3.4. Leadership

Inspiring examples of educational leadership of the kind described above are widespread in Pasuruan and Sidoarjo schools. Principals and supervisors have supported participation in pilots, the application of new learning in classrooms, dissemination within schools, and scale-out through the work of teachers' and principals' working groups. The strength of this support varies. In some cases, support appears to be a passive acceptance of 'bottom-up' demand from teachers for change, in other cases, it is active principal leadership for teacher participation in CPD and in follow-up. Demonstrating 'sideways-in' change, some principals demonstrate their leadership by inviting speakers from the community to contribute to CPD. School supervisors are also frequently involved in the preparation, implementation, and follow-up of pilots.

10.2.3.5. Teachers' working groups and schools

In all case study schools, teacher participation in the teachers' working groups played a central role in their professional development, reflecting the finding of Timperley (2011), that sustainable outcomes from CPD occur when teachers work collaboratively with colleagues. As if unable to get enough from this community of practice concept, frequent reference was made to the place of the within-school community of practice, known as the *KKG-Mini*. In Pasuruan, teachers and principals also referred to their *KKG-Kabupaten* (district teachers' working group) with evident pride. Case study schools also demonstrate a strong 'bottom-up' commitment to CPD through their *KKG-Mini* and use of their funds in support. The phenomenon of bottom-up change is apparent elsewhere in East Java. Arlianti and Shaeffer (2019, 9) find in their study of educational innovations in East Java that:

> Implementation (of innovations) … is best done through strong support and collaboration, not only within the school community (including the school committee) but also with numerous other partners, including: the local legislature; district and village offices; school clusters and supervisors; and local community-based organisations.

What is less certain, however, is the quality of work undertaken in the teachers' working group and *KKG-Mini*. Although it is clear that teachers' working groups are a sustainable concept for CPD, it is equally clear that there is a wide range of effectiveness of KKG ranging from those that do not function at all, to those that run a credible program of CPD. Minute books of teachers' working group meetings confirm an administrative bias during meetings. A complicating factor in their effectiveness is that teacher attendance is so variable. Estimates of attendances at teachers' working group literacy pilot meetings were only in the range of 50-70% of the target group.

10.2.3.6. Learning and teaching

Schools produced no recorded evidence of test scores in support of principals' and teachers' claims about improving student learning outcomes in literacy and numeracy. This gap in producing academic records is also noted in the East Java study of educational innovations by Arlianti and Shaeffer (2019). Nevertheless, there was a consistently positive response to questions about improved student learning outcomes. Student work inspected suggests that good-quality work is produced. Other indicators of improved learning outcomes were:

- consistent expressions of satisfaction with pilots' outcomes by teachers, principals and supervisors in schools and in both districts;

- teacher learning from pilots: this was indirectly demonstrated by teachers' capacity to engage in more in-depth analysis of learning and teaching issues during visits and by their unsolicited requests for further CPD in literacy and numeracy;
- evidence of students' worksheets, the quality of teaching materials, the availability of books, and the physical condition of classrooms indicating a pleasing learning environment.

This analysis provides positive evidence of the relevance of the pilot level components of INOVASI's theory of change, specifically, the design and implementation of contextually relevant pilots that are sensitive to local cultural values and practices.

10.2.3.7. Social, gender, and cultural issues

Documentary evidence confirms that social, gender and cultural issues have been assessed in the design of pilots and included as a pilot component. The need for policy support and effective strategies to address equality of participation, as well as better-balanced outcomes for students is evident. In schools visited, there is a disproportionate number of male principals, female teachers and female facilitators, and – for the INOVASI program as a whole – a uniform pattern of girls' test results being higher than boys'. At none of the schools or government offices visited was any concern about these academic, social, and gender issues expressed during the study. INOVASI's support for gender strategies to enhance the participation of both men and women in all activities is warranted.

10.2.4. Analysis part B: Governance and management

The Appendix shows positive evidence of sound governance and management support for pilots, the sustainability of benefits, and for scale-out. This evidence is found in local ownership, the planning and policy framework, financial support, and in organisational issues. There is weakness, however. The 'authorisers' of change reflect varied levels of commitment. While national support from the Ministry of Education and Culture is clear, district support varies at the highest levels varies according to personalities, local politics, and over time. For example, in Sidoarjo, high-level support is currently weak. In Pasuruan, high-level support is provided by the deputy regent.

A shift in practice is that authority is being transferred from individual 'authorisers' to legislation and regulation. Similarly, this is beginning to happen in schools. In one example of strengthened school-based management, one school has produced its own internal educational regulations, one on academic practices, and another on educational ethics.

The concept of social capital is useful in summarising the situation in Pasuruan and Sidoarjo. Social capital is the strength and effective functioning of social groups through the deepening credentials of teachers and principals, strong interpersonal relationships, a shared sense of values, and cooperation. Social capital is reflected in the political will to improve education, its formalisation in policy, regulation and financing, the quality of leadership, and the strength of educational organisations from the district education office down to schools. There is a shift in ownership of the challenges facing education. The shift is away from expecting donors to fund, lead, and to act, towards reform being owned and initiated by districts, schools, principals and teachers who have the authority and capacity to implement, sustain, scale, and deepen reforms. Both districts, for example, are taking on responsibilities for funding district facilitators and facilitators and teachers are developing some of their own materials for CPD.

10.2.5. Analysis part C: Sustainability and scale-out issues

The two questions about sustainability posed are: (a) is there evidence to show which approaches are likely to sustain, and (b) why?

The answer to the first question, 'Is there evidence of likely sustainability of the benefits?' is yes. The approaches used to design and implement pilots, the evidence of local governance and management, and the outcomes achieved to date in the two case study districts, indicate sustainable benefits are likely. The evidence presented in the Appendix and discussed above demonstrates a consistent pattern of issues being addressed that supports this conclusion.

Why are these approaches likely to sustain? The evidence here is complex and is summarised as follows:

- The evidence from INOVASI's documented approach, explained by program staff and beneficiaries, evaluated by supervisors, principals, and teachers, and observed in classrooms, confirms that the best evidence we have from research and experience is being implemented within the constraints of resources and local knowledge.
- There are positive indicators of supportive management and governance in both districts. This occurs in policy and planning, organisational issues, and in finance and resources. Ownership and local participation in educational development are also evident.
- There is evidence of actual sustainability in schools from past donor support that confirms several of the principles evident in INOVASI's approach, in particular, concepts of addressing local needs, local ownership and responsibility.
- Dynamic sustainability is evident in the continuation and adaptation of benefits such as local initiatives to support dissemination and scale-out.
- Mindset: Dynamic sustainability is also indicative of a deepening understanding among beneficiaries of learning and teaching and of students' needs. Teachers report that they understand the literacy and numeracy material which they say is culturally relevant and considered important in making changes; their interactions and practices reflect acceptance of the importance of improving learning for children.
- In both case study districts, there is a culture of teachers who have strong professional support networks that operate at many different levels, including person-to-person, within schools, and through teachers' working groups.

10.2.5.1. Scale-out

The evidence of scale-out in both Pasuruan and Sidoarjo is clear. The evidence in Table 11 shows a commitment to local funding and scale-out. This commitment leads to scale-out to 18 times more schools than originally supported by INOVASI in Pasuruan and to 26 times more schools in Sidoarjo. Comparing these two districts shows no clear relationship between spending on scale-out pilots and the number of schools reached. Whether this apparent lack of relationship is related to the strength of other forms of support for scale-out, such as the dedication of teachers and facilitators, or to the quality of outcomes, is at present, unknowns.

Table 11: INOVASI and scale-out interventions, July - December 2019

Source: INOVASI 2020, Six-monthly Progress Report Jul-Dec 2019, Annex 2

District	Pilot	Number of INOVASI schools (Note 1)	Number of scale-out schools (Note 2)	Scale-out factors (Scale-out schools / INOVASI schools)	Actual scale-out spending, APBD Pilots (AUD)
Pasuruan	Literacy 2	8	146	18	$37,800
Sidoarjo	Numeracy 2	11	284	26	$19,500
All East Java Districts	All pilots	70	593	8	$108,238
All Districts	All pilots	158	1068	7	$751,136

Table Notes:

- INOVASI pilots in which designs are modified, with support from INOVASI, to be context-relevant by local stakeholders.
- APBD and non-APBD funded scale-out pilots in which designs are modified to be context-relevant by local stakeholders with support from INOVASI.

Pilots are defined as co-designed when local stakeholders are involved in the initial planning, design and implementation processes; context-relevant means the pilots identify and address educational challenges at the local district level or lower. Co-design is an essential indicator of local ownership of change processes that, in turn, are indicators of sustainability.

Scale-out in case study schools and districts is achieved through a complex range of mechanisms operating together at four levels:

- First, as the data illustrate, scale-out is supported by district-level policies and resources. Pasuruan has further formalised this through their *KKG-Kabupaten*.
- Within-school dissemination occurs through a variety of informal and formal social structures such as person-to-person, person-to-school, small group-to-school. It is usual to find that the *KKG-Mini* is used for this purpose within most schools.
- Between proximate schools, occurring through the local teachers' working group and sometimes other active working groups in the sub-district. This process draws on the skills of teachers who have participated in INOVASI pilots.
- Dissemination and scale-out also occurs through the use of technology by schools and teachers who are linked individually and in groups via Facebook and WhatsApp.

Within-school dissemination is common. The frequency with which teachers freely volunteered information about this process and their role in it, supported by *KKG Mini* records, suggests this is likely becoming a universal practice following participation in INOVASI's pilots. Within-school dissemination is critical for schools that have no membership of an effective teachers' working group. There is a strong sense of collective responsibility in the two districts for dissemination, but this is not managed in any consistent way in most schools.

The technical challenges for dissemination and going to scale that arise from observations of current practices in Pasuruan and Sidoarjo, are worthy of further attention. How teachers can disseminate in their schools, how to disseminate through the teachers' working groups and other sub-district organisations, and at district level, deserve to be developed further into

coherent strategies to strengthen all the CPD activity that is occurring. But great care will be needed to nurture the process and not over-regulate and over-manage it to the point of destroying the evident initiative and commitment. The quality of CPD provided by facilitators in these settings – the capacity to design, deliver, mentor, monitor, and evaluate CPD, and the quality of the support agencies and universities can be poor and may warrant concurrent attention. The final missing link, also noted by Arlianti and Shaeffer (2019), is the quality of district-level monitoring and evaluation to assist in improving processes and for quality assurance purposes. In summary, the professional developers also need development.

10.2.6. How to achieve scale-out?

A question often asked in educational development is 'how can successful changes in schools and districts be scaled-out?'

The framing of the question implies that the 'how' is something that can be achieved in a top-down, perhaps nationally-driven, manner. However, the data here show that local governments are achieving scale-out. Additionally, scale-out occurs through social media and teachers' networks at the local level. The analysis of sustainability and scale-out indicates a further perspective to answering the question. This perspective lies not in actively 'doing' things based on knowledge of how, but by 'enabling' educational professionals to do this work in the bottom-up ways they are now using and by understanding the process more fully.

What does this mean? The meaning of the verb 'enable' is to give (someone) the authority or means to do something; make something possible. What, then, are the potential enabling approaches to scale-out?

The relationship between the donor and the Government of Indonesia. The first approach is to consider the future role of donors. The environment where donor aid to education is in decline does not negate a potential role to assist in ways consistent with limited funding, including enabling local change-agents through continuing technical support and research.

The governance of basic education. Since 2003, the Indonesian government has decentralised the governance of basic education as part of the transfer of responsibilities to district governments. The second approach to answering the question of achieving scale-out is to recognise the fact of decentralisation and the contradiction in the proposition that national and provincial governments might consider how to scale-out change in this decentralised system. The assumption that the development of a nationally-led quality standard can reach all corners of this large and diverse nation is flawed. This kind of massive scale-out is unlikely to occur. It is sobering to recognise that different levels of regional quality attainment persist in other large, diverse, decentralized systems elsewhere in the world, including Australia and the United States. Local authorities may be better placed to address these challenges, as the principles of decentralisation indicate, provided they can access continuing technical support when needed and financial resources.

Creating, supporting, and sustaining the enabling environment for scale-out. The consideration of governance leads to the third approach. This approach is for governments at all levels to develop the enabling environment for local agents of change – the teachers, the principals, the district government officials, the universities and other government and non-government organisations to implement change effectively and in line with quality-assured standards.

Expressed in terms of the triple-A concept in PDIA, the national government may have the authority and command of the organisational arrangements and budgets in education, but may

lack the technical ability and local cultural knowledge necessary for effective implementation of scale-out. Much of this ability resides in schools and districts. Case study evidence demonstrates the capacity and acceptance for the scale-out of improved practices in teaching literacy and numeracy. In fact, what exists in many schools is more than acceptance (a relatively weak noun). There is now evidence of a much stronger sense of local responsibility and capability to supply the demand for opportunities to learn about addressing children's literacy and numeracy needs. This phenomenon indicates the importance of giving attention to the concept of capability development discussed in section 4.1.

10.2.7. Case study #1 conclusions: Are benefits likely sustainable?

The evidence from the case studies indicates five conclusions about the likely sustainability and scale-out of benefits in Pasuruan and Sidoarjo.

- First, the benefits from pilots are likely sustainable. Scale-out initiatives are sharing these benefits to other schools. That is, there is case study evidence illustrating INOVASI's position that scale-out is meaningless without sustainability; the two are shown in the cases to be interdependent (INOVASI 2019e, 5).
- Second, sustainability and scale-out are being achieved from the 'bottom-up', initially within schools, but subsequently at more substantial levels including the teachers' working groups, sub-districts, and districts as a whole. Districts, facilitators and teachers are now taking on responsibilities such as funding and the local development of materials for CPD. Additionally, there is anecdotal evidence that sharing of expertise now extends to other districts and provinces in Indonesia.
- Third, the accumulating evidence validates a set of indicators (shown in the Appendix) that are necessary pre-conditions for sustaining benefits and scaling these benefits beyond the initial beneficiaries. Overall, the evaluation of INOVASI and its partners' performance against these indicators is positive.
- Fourth, re-testing the available evidence against the unsustainability indicators reveals no systematic evidence in either case study district that the approaches used by INOVASI will not continue to support the likely sustainability of benefits.
- Fifth, the indicators shown in the Appendix illustrate areas of weaknesses that need to be understood and addressed to strengthen the enabling environment for sustainability and scale-out.

Finally, as explained in section 10.1, Methodological introduction, these two case studies in Pasuruan and Sidoarjo are similar to two experiments. The distinguishing difference with survey research is that each single case (experiment) provides evidence that INOVASI's approach to sustainability is working, and why it is working. That evidence is a step towards understanding how sustainability and scale-out work in Indonesian education. However, further multiple cases will be necessary to develop greater confidence in the findings and in the indicators of factors reflecting regional variations.

10.3. Case study #2: Actual sustainability

10.3.1. Evidence for the actual sustainability of benefits from donor support

A subsidiary case study of six schools in Pasuruan and Sidoarjo was undertaken to understand the processes supporting the actual, longer-term sustainability of benefits from past project support. An objective of INOVASI is to find out what works and why. One good way to do this is to investigate the actual sustainability of benefits from previous educational development efforts. This is even more valuable when actual sustainability can be studied in the same cultural context where INOVASI is working which is East Java.

This case study extends over five years. It has been supported by two projects working in Pasuruan and Sidoarjo, initially USAID's project, Prioritizing Reform, Innovation, and Opportunities for Reaching Indonesia's Teachers, Administrators and Students (PRIORITAS) and now DFAT's INOVASI. Visits to case study schools occurred in 2014, 2018 and 2019, as shown in Table 12.

The published evidence for sustainability – the continuation of benefits from educational development projects – is found in donors' end-of-project reports. This evidence, provided by donors over 46 years and in 91 end-of-project reports, show that only 52% of the 91 projects are evaluated as 'likely' to be sustainable (Cannon 2017). That bleak result is an estimate of sustainability made at project's end. When the evidence is tested two years or more after project completion, it is found that:

- Only 22 project reports (24% of the 91 projects located for analysis) present an evaluation of the actual sustainability of benefits two or more years after project completion. Eleven of these 22 projects (50%) are evaluated as actually sustainable – that is, 12% of all 91 projects.
- The findings of 52% of all projects evaluated as likely sustainable at project completion and 50% evaluated as actually sustainable validates the general proposition that about half of education projects produce actually sustainable benefits.

This case study aims to advance understanding of the factors leading to the actual sustainability of benefits. There is a substantial difference between the concepts of likely sustainable benefits and actually sustainable benefits achieved over an extended time period. Likely sustainable means having a high probability of the sustainability of benefits being true if observed in the future. At best, this is an estimate made against evidence-based criteria at around the time of project completion. Claims made during a project that benefits are 'sustainable' are misleading; potentially or likely sustainable is more accurate.

Actual sustainability can only be assessed at some time after development support has ended. A minimum of two years from completion is proposed for this time. Two years enables the processes of local ownership to become established and evidence of continuing implementation and any further development – dynamic sustainability – to be confirmed.

10.3.2. Previous project support to schools in Pasuruan and Sidoarjo

The foundation for this study of actual sustainability is the work of two USAID educational development projects in Pasuruan and Sidoarjo, the Decentralized Basic Education project (DBE), 2005-2011, and PRIORITAS, 2012-2016. Both projects built sequentially on the

positive experience of USAID's first education project in Indonesia, including in East Java, MBE, the Managing Basic Education project (2003-2006).

The sequential implementation experience of these projects is significant in understanding sustainability in Pasuruan and Sidoarjo. This sequential implementation illustrates the concept of complementary sustainability described in section 9.6. In contrast to many projects, there was a strong element of continuity and building on lessons learned from one project to the next. Continuity also extended directly to other projects implemented by AusAID and UNICEF.[25] This continuity is evident in personnel, materials and methods, and in the trust and relationships established with government and communities. PRIORITAS followed-up the work of DBE in some of its partner districts and schools, including in Pasuruan and Sidoarjo, by providing technical support (but not finance) to assist them in achieving scale-out and sustainability goals.

The DBE project goal was to improve management and governance and the quality of education in primary and junior secondary schools. The final evaluation of DBE in 2012 found the project to be successful. However, of relevance to sustainability, the evaluation also reported on the 'fade factor' as an early warning indicator of a threat to sustainability (Evans 2012). The fade factor is discussed further in section 9.5. However, no consistent evidence of fade-out was found in any of the five schools studied in Pasuruan and Sidoarjo in 2019. Nevertheless, in 2018 there was some evidence of fade-out in one Sidoarjo junior secondary school observed in that year. This fade out appeared to be a direct outcome from a change of school principal.

PRIORITAS worked directly with districts and schools to build models of good practice. Districts themselves disseminated these models to other schools using local funds and with limited technical support from PRIORITAS. USAID's continuing technical support from the DBE years was a unique initiative in educational development in Indonesia.

Scale-out started in 2011. According to a PRIORITAS study of sustainability and scale-out in 2014, the disseminated programs had contributed to several outcomes: good practices in learning and teaching; reports of improved learning outcomes; more attractive and conducive classroom layouts; more student engagement through active learning methods; and greater use of lesson plans and materials. Students, teachers, principals and parents expressed unanimous satisfaction with the new methods and changes made in their schools (Cannon, Arlianti, and Riu, 2014).

Did the strategy of local scale-out work? The PRIORITAS study sought to answer this question as well as to estimate the likely sustainability of benefits from this continuing technical support. The general findings were that:

- There had been extensive scale-out of good practices and these practices had a positive impact on districts, schools, teachers, and students.
- Changes in schools may be of better quality and more sustainable than in those schools that had participated directly in PRIORITAS for the following reasons: local facilitators who know the context and are known in the school; school ownership of change; a

[25] These projects are the Indonesia – Australia Partnership in Basic Education (AusAID), 2004 – 2007 and Mainstreaming Good Practices in Basic Education (UNICEF), 2006 – 2010. The AusAID and UNICEF projects both drew directly from the MBE experience and design – as did USAID's DBE – and interacted professionally with USAID's MBE and DBE projects.

sense of responsibility; school control of change. These indicators suggest deeper, sustainable change.

- A solid foundation for the actual sustainability of benefits had been built.

The study also noted that achieving actual sustainability was hampered by the absence of research and experience-based implementation guidance to achieve this desirable outcome. This shortcoming is addressed by the present case study of actual sustainability. The study seeks to provide modest evidence of what works in achieving actually sustainable benefits so that future design and implementation of educational development interventions may be better evidence-based.

10.3.3. Case description

Six schools in the East Java districts of Pasuruan and Sidoarjo were observed over the period 2014 – 2019 to try to understand the processes contributing to the actual sustainability of benefits received from past USAID development projects. That understanding can assist INOVASI's work by providing evidence to inform its continuing approaches to strengthen sustainability and scale-out from its pilots. Table 12 shows the pattern of observations in these six schools and the evidence of actual sustainability of outcomes.

The first observations, made in 2014 for USAID PRIORITAS, found evidence of positive, likely sustainability of benefits in all six schools. In 2018 and 2019, as the two past projects had terminated their formal inputs in 2016, any evidence of sustainability would provide evidence of *actual* sustainability over the two – three years since project completion.

Observations in 2019 of five of the original six schools that had participated in the USAID projects revealed convincing evidence of the actual sustainability of benefits. The conclusions drawn from observations made over five years beginning in 2014 is that all schools were continuing to implement improved approaches to teaching and learning, that teachers and principals consistently reported improved learning outcomes and expressed professional satisfaction with changes.

Table 12: Actual sustainability of benefits in schools, 2014-2019

Schools	Years of observation	Likely sustainability of benefits? (Yes/No); Year of observation	Actual sustainability of benefits (Yes/No); Year of observation
Pasuruan			
MIN	2014, 2019	Yes; 2014	Yes; 2019
SD	2014, 2019	Yes; 2014	Yes; 2019
Sidoarjo			
SMP A	2014, 2018, 2019	Yes; 2014	Yes; 2018, 2019
SMP B	2014, 2018	Yes; 2014	Uncertain (Note 1); 2018
SD A	2014, 2018, 2019	Yes; 2014	Yes; 2018, 2019
SD B	2014, 2019	Yes; 2014	Yes; 2019 (Note 2)

Table Notes:

- Note 1. SMP B was not revisited in 2019. In 2018 this school was exhibiting signs of uncertain sustainability of the benefits that were so strongly evident in 2014. This change (or fade-out) appears to reflect a change in school principal.
- Note 2. SD B was not accessible in 2018 due to major renovations and was not visited.

Moreover, there was also evidence of dynamic sustainability in these schools. That is, not only the continuation of benefits, but adaptation and advancement of benefits after development assistance concluded. Examples of dynamic sustainability observed in 2019 include:

- computer-based advancement of library management and services in one SD and one SMP;
- within-school CPD activity through the evolution of the *KKG-Mini* in all schools;
- building on past successes, evidence of further improvements in teaching methods, some of which have been supported by the work of INOVASI and its partners in literacy and numeracy;
- the further strengthening of school-based management.

By 2018 during an INOVASI-supported visit to schools, indicators of the actual sustainability of benefits from earlier development inputs were apparent. These indicators were:

- new principals had been trained by the district education office (and not by projects); in one SMP there was an active handover in the school from one principal to the next with a demand for the new principal to guarantee the continuation of nominated good practices;
- teachers' working groups and active school committees had been strengthened;
- initiatives in providing support to children with disabilities in regular schools has been introduced;
- the district education office continued to provide a budget and leadership support for CPD, and continued to work towards equitable outcomes for children by working with the local religious affairs office.

Improvements in teaching methods did not occur through local school-based initiatives alone. Several teachers in these case study schools reported having had contact with INOVASI literacy and numeracy programs, mostly through teachers' working group activities, including the *KKG-Kabupaten* in Pasuruan. These varied activities reflect the complexity of dynamic sustainability processes. It makes the attribution of outcomes to one or another project intervention almost impossible. It also demonstrates how the cumulative impact of CPD over time in East Java has produced sustainable benefits.

Indicative evidence of actual sustainability from the earlier projects supporting active learning is:

- consistent evidence of changed teaching methods in all classes and in all schools observed;
- the widespread use of teaching materials, some supplied years ago by USAID;
- neat, clean and welcoming classrooms, well-maintained buildings and grounds,
- consistent reports from teachers and principals of sustained improvements in student learning outcomes (although good quality empirical evidence of this remains elusive),
- student behaviour consistently exhibiting clear signs of energised, active participation and enjoyment in their classroom experiences.

Five of the six schools observed in the 2014 USAID study are 'dissemination schools'. This means they had not directly participated in the DBE project as direct partners but had only received technical support from USAID PRIORITAS and received funding from local sources. There was no clear evidence that the sixth school, the one DBE project school (MIN), was significantly different from the others. This observation confirms a conclusion drawn from the 2014 study that:

> Dissemination programs are having a positive impact in schools and the likely quality of what is being achieved might possibly be better than those outcomes from direct project support. This outcome reflects local ownership of school reform and a stronger sense of responsibility in schools and districts linked to local funding of dissemination activities (Cannon, Arlianti, and Riu, 2014, 1).

10.3.4. How has actual sustainability been achieved in these schools?

Observations of these schools over five years suggests four factors in answer to this question that are explained below.

Professional continuity: One common characteristic of each school is that many teachers working in 2019 had been with their school since at least 2014. This means there has been a sustaining thread in each school of continuing teaching staff.

CPD: Several teachers had received training from DBE and/or PRIORITAS. Others had experiences associated from internal school-based dissemination, and some with other past projects that had been implemented in East Java.[26] Others have received mentoring from those of their teaching colleagues that have directly participated in INOVASI's pilots. Some teachers could not identify the development project from which they derived benefits.

Thus, there has been a complex web of local and donor-supported CPD inputs over several years in both Pasuruan and Sidoarjo. Some senior teachers and principals acknowledged they had been participants as young teachers in one of the first basic education projects in Indonesia, the British project, *Cara Belajar Siswa Actif* (CBSA), implemented from 1980 – 1995. It is impossible to disentangle inputs from different projects implemented over almost 40 years in order to determine precisely the sustainability of benefits from one specific project or another, particularly when teachers' memories are not clear about what project supported their school and when. There is the further complicating factor of teacher learning from their classroom experience, as well as a range of other possible sources of CPD.

School leadership: In two of the five schools observed in 2019, the same principal was still in place from the time of the 2014 study. Three principals were new to their schools. However, change had been maintained or advanced in all five schools.

This was not the case in one junior secondary school in Sidoarjo included in the 2014 study and visited in 2018 but not again in the 2019 study. In that school, observations in 2018 revealed a general decline since 2014 across several indicators – physical evidence in classrooms and buildings, program initiatives, and academic outcomes. These declines followed the arrival of a new principal, suggesting that changes in school leadership may have had negative impacts on school performance and in sustaining benefits from past initiatives.

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[26] JICA's Lesson Study, AusAID's Indonesia Australia Partnership in Basic Education (IAPBE), and the World Bank's Better Education through Reformed Management and Universal Teacher Upgrading (BERMUTU).

But negative impacts from a change in principal is not always the case, as the example of three other changes of principal in Pasuruan and Sidoarjo demonstrates. In each of those three cases, common sustainability factors include strong principal leadership combined with a core of experienced and dedicated teachers, some of whom had taught in the same school over the years of different project inputs and associated professional learning. Thus, an old belief that change stops when good principals leave a school is demonstrably not true in all cases, but can, nevertheless, be a contributing cause of the 'fade factor' discussed in section 9.4.

School-based management: The supporting framework of school-based management disseminated to these schools from DBE was continuing and had been further strengthened through the extension of management strategies beyond school committees, planning, and finance, to include academic matters such as library management, and the expansion of the *Paguyuban kelas* – the parent's class association.

10.3.5. Widespread evidence of improved classrooms and flexible teaching and learning methods: the sustainability and scale-out of PAKEM

An indicator of sustainability and scale-out from past educational development activities in both districts is the widespread evidence of change in classrooms. Improved classroom practices continue to be evident in all schools and in almost every classes observed in the schools visited for this case study. This change reflects elements of PAKEM (*pembelajaran aktif, kreatif, efektif, menyenangkan dan inovatif*, in English, active, creative, effective, joyful, and innovative learning). PAKEM has been implemented by several donor projects in various East Java districts continuously from 1999 to 2016 (Hagul 2010; RTI International 2017).

School observation shows that PAKEM is now implemented by teachers who have not received the direct benefit of CPD in PAKEM, either from donors or from government programs.[27] INOVASI's literacy pilots have strengthened these changes in classrooms, according to teachers who have participated in INOVASI pilots. As with evaluations of PAKEM implementation in other projects, this outcome has been well received by teachers and students with consistent reports of improved learning outcomes, motivation and behaviour.

The evident scale-out of PAKEM in schools is significant. School supervisors in East Java estimate that it may be as high as 70% of classrooms in the province. Yet this level of acceptance challenges research findings about this kind of progressive, student-centred learning in developing countries (Guthrie 2011, 2018). Guthrie's findings are that progressive approaches to teaching like PAKEM risk unsustainable outcomes because they clash with formal, traditional cultural values. Currently unfashionable in Western donor-countries, formalism is linked to traditional classroom routines and hierarchical control where teachers dominate, use closed questioning approaches, and students tend to be passive. Formalistic teaching styles stand in sharp contrast to more, flexible, liberal, and democratic teaching styles as embraced by PAKEM (Guthrie 2018, 208). Table 13 lays out Guthrie's conception of teaching styles.

[27] This is a key finding. It seems a tipping point for dissemination and the scale-out of change was reached in these two districts. How did this happen? The limited evidence we have is summarised in Table 14. It is clear that no single factor can account for this change. However, the cultural characteristics of East Java with its strong sense of community, plus the impact of numerous educational projects over a long period supporting changes to be considered necessary educationally and acceptable culturally, would seem to be significant.

Table 13: Teaching Styles Model

Source: (Guthrie 2011, 2018)

Variables	Authoritarian	Formalistic	Flexible	Liberal	Democratic
Teacher role (authoritarian to democratic).	Formal, domineering. Imposes rigid norms and sanctions.	Formal with well-established routines and strict hierarchical control. Uses closed questions.	Uses variety in methods and some relaxation of controls, but still dominant. May use open questions.	Actively promotes student-centred classroom. Pupil participation in decisions encouraged.	Leader of democratically based group. Coordinator of activities.
Student role (passive to active).	Passive recipient of teacher-defined roles in behaviour and learning. Little overt interaction.	Often complicit in passive learning role, although some overt interaction.	More active role within constraints defined by teacher.	Works within fairly wide boundaries, especially in learning decisions.	Actively participates in decisions. Increasingly responsible for own actions.
Content approach (teaching to learning).	Teaching of rigid syllabus with closely defined content for rote learning.	Organised processing of syllabus with emphasis on memorisation.	Some flexibility in use of syllabus and textbooks, with attention to learning problems.	Wide degree of curricular choice. Emphasis on learning processes rather than content.	Strong emphasis on student learning at individual pace. Teacher a resource.
Reinforcement (negative to positive).	Strict teacher control with strong negative sanctions (e.g. corporal punishment) enforcing obedience.	Teacher-based negative sanctions, especially focused on learning.	Greater attempts to use positive reinforcement, backed by strong negative sanctions.	Increased emphasis on positive reinforcement.	Positive response to internal motivation, although with latent teacher authority.
⟶ More to less teacher-centred ⟶					

How can this apparent contradiction between observable changes in Indonesian classrooms and the research evidence of the unsustainability of progressive approaches in developing countries be explained? There are at least two possible explanations in the Indonesian context.

First, Guthrie argues that formalism is not necessarily as narrow as often supposed. Formalistic teachers may not rely on formal approaches alone. Authoritative formalistic teaching can include the teaching of modern content as well as fostering student engagement within a formal framework.

Second, and confirming Guthrie's argument, close observation of PAKEM classrooms suggest that this progressive teaching style is not commonly implemented in full. Classrooms consistently show evidence of improved learning environments. There are displays of teaching materials and student work, reading corners with collections of appropriate books, students

sometimes working actively in small groups or working alone on a specified task with a variety of materials or worksheets. But this changed environment is one where teachers can also be observed using didactic methods, asking closed questions, directing student activity and following formal classroom and school routines. It is apparent that many teachers are using more flexible methods, require more student activity, but they are still typically dominant in their classrooms. In other words, teachers have a greater range of teaching behaviours to use flexibly and with confidence. Students certainly have a more active role in class. But their activity is within clear constraints defined by the teacher. Observation suggests that full implementation of PAKEM as intended is not common. However, partial implementation of a more flexible approach to teaching and learning is increasingly common and has been scaled-out from past project and government-supported CPD.

The use of some of the elements of PAKEM is what is happening in many classrooms observed in Pasuruan and Sidoarjo schools. Elements of formality are also evident in the great emphasis on the preparation of teaching plans. Plans are often seen as a moral duty rather than a technical or professional responsibility. In its Code of Ethics, one school states that teachers are required to make plans as a form of innovation. While there is evidence of compliance with these regulations, and a sense of considerable activity to produce plans in teachers' working group meetings, it is less clear that plans are implemented, and even less so, evaluated for their effectiveness in promoting intended learning outcomes. Some principals explained that they supported attention to literacy by requiring teachers to refer to it in their plans. Whether the plans were implemented is not clear.

10.3.6. Case Study #2: Conclusions: why have practices actually sustained?

When questioned about why practices had been sustained, teachers, principals, and supervisors gave a variety of reasons. It was not only the reasons themselves that were informative. There was a significant change in the quality and depth of explanations offered compared with frequent experiences in visiting Indonesian schools in the past. This change indicates a deeper level of understanding of teaching methods and student learning outcomes. In the past, common response to questions about teaching and learning were framed in very general and superficial terms of being 'good' or 'we need more money', masking an apparent blindness to a catalogue of issues in schools and the deeper challenges to teaching and student learning.

The analysis suggests that the actual sustainability of benefits occurs because of the following interconnected factors:

- Relevance: Teachers consider new teaching methods, introduced by DBE and PRIORITAS, and developed further by INOVASI, to be relevant because they support children's learning and assist teachers in their classroom work. Student results improve as an outcome, reinforcing teachers' practice and strengthening their commitment, which encourages dissemination and scale-out.
- Mindset: Teachers report that they understand the newer approaches to teaching and learning, which they say are culturally relevant and considered important in bringing about needed change.
- Culture: In addition to confirming the cultural relevance of new approaches, teachers also believe there has been a subtle shift in local, school culture. The shift now enables critiquing ideas among teachers with the strict caveat that it must be done in polite and respectful ways. School cultural change is influencing teaching methods: teachers,

principals, and supervisors are more open with each other and with children so they, in turn, can interact more openly in their learning than was the case in the past.

- Acceptance: New methods are acceptable in enhancing learning outcomes and in creating a more pleasant classroom environment for both students and teachers, compared to past approaches.
- Educational leadership by principals and supervisors: There is evidence of principals providing strong educational leadership in their schools, in teachers' working groups, as well as through meetings of their own school principals' working groups. Supervisors also attend these working group meetings to support their schools and to support scale-out throughout the sub-district and district.
- Ownership and responsibility: There is a strong sense of collective responsibility among teachers, principals, and supervisors in these schools for the quality of teaching and learning, and for educational development. That sense of responsibility is further reflected in district governments'' policy and regulatory commitments, and by the provision of diverse, local sources of financial support.
- Within-school dissemination: This is frequently done within schools by teachers who have participated in a CPD activity. This kind of dissemination includes inducting new teachers.
- Networking: In both Sidoarjo and Pasuruan, networking among educational professionals is a powerful tool for sustainability, dissemination, and scale-out. This occurs through the teachers' working group, the school principals' working group, and internal school networks described as the *KKG-Mini*. One school claims to serve as a reference 'model school' for schools in East Java, Aceh, and Sulawesi. Informal networks are common and include friendship groups, social media networks, and networks of facilitators working voluntarily to support other schools.
- Parental support: School based management continues and has been strengthened because of parents being more involved in class support through the *Paguyuban Kelas* (the parent's class association).
- Complementary sustainability: The impact over time of the cumulative changes from past donor and government support for educational development (see section 9.6.

The evidence from this small group of primary and junior secondary schools in Pasuruan and Sidoarjo is that there has been actual sustainability of benefits from past development project activities, primarily in teaching and learning, but also in school-based management. Why they have sustained is the outcome of interactions among several complex factors. Actual sustainability cannot be attributed to one particular factor alone nor to one kind of specific project intervention. The list of factors above does not preclude other possible reasons underpinning the actual sustainability of benefits. Some of these possible reasons are listed in Table 14.

Are these conclusions generalisable to other schools, other districts, and provinces?

The simple answer is no, not directly. The conclusions are not generalisable in the statistical sense of estimating probabilities of specific outcomes, drawing on such factors as listed here. This is because of the nature of case studies. Case studies do not follow a sampling logic to be generalised to a population, or in the case of INOVASI, to other program districts in culturally diverse provinces. Each case is similar to an experiment. This means the analysis of cases across experiments identifies commonalities in different settings and whose extent may be generalised beyond those settings conceptually, but not statistically (Guthrie 2018, 164).

Nevertheless, the results of this case study of actual sustainability, do provide insights into how the processes of sustainability and scale-out have operated in an Indonesian context. The study has yielded indicators that can be tested elsewhere in other INOVASI partner districts. So the conclusions not being generalisable does not mean that they are not useful. The evidence presented here does provide a beginning to conduct further research that can be built on this Indonesian case study evidence. The evidence also provides information that can be used for immediate application in program and government policies and practices intended to improve the sustainability and scale-out of approaches that assist in improving students' learning outcomes.

A significant area of further interest is what the cases tell us about INOVASI's theory of change. The cases cannot validate the complete theory. Insufficient evidence is available in this study about the inception of activities in case study schools, as far back as 2011. Similarly, the cases cannot predict the future for these six schools. However, the evidence we have validates the following components in the theory of change (Figure 1):

- the program principle of continuous sharing;
- the program linkages between pilot Level and district level, specifically the sequence of outcomes as follows: Participants knowledge, skills and attitudes improve > Participants change practices > Student learning improves in partner schools > Support scale-out and system-based pilots to, directly and indirectly, improve learning outcomes.

Thus, as Yin (2018, xiii) might argue, these cases of six schools, observed over five years, show how it is possible to consider what is similar and different about change in the schools. The cases help to understand the program theory better, and to understand what works and why in achieving the actual sustainability of benefits in these districts.

10.4. Conclusion

INOVASI's approaches are likely to lead to the sustainability and scale-out of benefits from the pilots. This conclusion is informed from the literature and by testing INOVASI's approaches in the context of the East Java districts of Pasuruan and Sidoarjo against a set of indicators. Re-testing data against a set of unsustainability indicators validates the conclusion of likely sustainability. The conclusion of likely sustainability is further informed by the evidence that INOVASI's CPD practices have met the specific 'threshold criteria' set out in Table 7.

With implications for future practice, one finding from the case studies is that sustainability and scale-out are being achieved from 'bottom-up' initiatives led by teachers and facilitators. This finding shows that such bottom-up initiatives by teachers are running ahead of the theory of change expectation that districts will provide administrative leadership on scale-out. Enabling support to this bottom-up phenomenon may be a constructive strategy for consideration in future policy and practice.

The study of the actual sustainability of benefits presents evidence that there has been sustainability of benefits from past development project activities. Why benefits have sustained is the outcome of complex interactions among factors and actual sustainability cannot be attributed to one factor alone. These factors include the relevance of the learning and teaching approaches adopted for teachers' day-to-day work, the increased motivation to teach derived from seeing students' results improve, educational leadership provided by principals and supervisors, and local ownership and responsibility for change.

The power of networking among teachers and others, and the long experience of benefits from past donor support in East Java, reflect the distinctive culture and experience of the two case study districts. Networking occurs formally through teachers' working groups, internal school networks, and informally through friendship groups and social media. The impact of the cumulative changes from earlier donor and government support for educational development is apparent.

A recurring finding throughout this study of CPD and sustainability is the need to identify, address, and mitigate risks to successful outcomes. Unless risks are mitigated, and minimal quality thresholds in program implementation achieved, the effectiveness of all that is intended is compromised, increasing the risk of failure.

The case studies of likely sustainability and actual sustainability provide deeper insights into how the processes of sustainability and scale-out have operated in an Indonesian context. INOVASI's approach is consistent with the findings and with recommendations from studies in the literature. The studies indicate no major shortcomings in either INOVASI's design or implementation.

This study has produced a multitude of sustainability indicators shown in the Appendix and a long list of factors contributing to sustainability and scale-out, as shown in Table 14. It is a reasonable for educational development practitioners to enquire about the relative importance of these indicators and factors, the priority for their implementation, and whether they can be weighted in some way for monitoring and evaluation.

Two general answers can be provided to the questions of importance and priority. The first answer is that the contextual and policy matters listed in Table 14, particularly the sensitivity to local contexts, the actual needs of teachers and schools[28], and reform ownership, have significant priority. Here, the use of PDIA has demonstrated its value in ensuring these matters are identified and addressed collaboratively with partners.

The second answer is to give concurrent priority to ensuring that threshold criteria for good quality and effective CPD have been addressed. These criteria are set out in full in Table 7 and are summarised in Table 14. Here, high quality educational design and implementation addressing the actual needs of intended beneficiaries and the declared intentions of the project are fundamental.

Unless the quality of design and implementation is addressed, monitored and validated, and the end of program outcomes achieved, it is illogical to expect the program's benefits to be sustained and scaled-out.

The two answers provided here suggest that the greatest weighting in monitoring and evaluation should be given to these contextual and implementation factors. It is not possible, however, given our current state of knowledge, nor desirable given the variety of contexts in which INOVASI works, to assign a quantitative value in any such weighting.

The success of INOVASI's work in sustainability and scale-out is due to its alignment with national and local government policies and needs, the identified needs of teachers and

[28] The idea of actual needs, as expressed by teachers and schools, is critically important. Section 4.1.1 makes the important point that is reinforced here: "Continuing professional development is commonly seen as a solution to meet specific needs in the teaching workforce. An assumption is that problems can be solved by focusing on the 'deficiencies' of teachers and principals, often politely expressed as 'their needs', but on the contrary, needs identified by others."

schools, and at a more abstract level, its alignment with the international evidence for successful educational change. Further, the findings of the study confirm that the principles of PDIA have practical relevance in helping Indonesian education to become 'unstuck' in its progress towards achieving quality outcomes at scale, and in explaining what works and why in both CPD and the sustainability and scale-out of benefits.

Table 14: Evidence of factors contributing to sustainability and scale-out

Criteria	Sources: reviews and studies
Threshold criteria	
The criteria for effective CPD, as displayed in Table 7: Threshold criteria for effective CPD, have been met.	Timperley (2011); Cannon (2017); Bautista (2019)
Concepts and terminology	
Move away from the static idea of sustaining benefits towards the idea of 'dynamic sustainability'.	Andrews et al. (2015)
Usage of terms must be simple and consistent with local understandings and carefully defined. Western constructs of sustainability and scale-out may not be understood in some districts.	Fanany, Fanany, and Kenny (2011); Jessyca (2013); Cannon (2018)
Contextual and policy matters	
Planning for sustainability and scale-out must be sensitive to the local social, political and cultural context.	Courtney (2007); Guthrie (2018); Luke (2011); Sopantini (2014)
The mutually reinforcing interplay of technical, political and cultural contextual factors are essential elements in achieving sustainability and scale-out.	Timperley et al. (2007; Timperley (2011); Sopantini (2014); Andrews et al. (2015); Guthrie (2018)
Analysis of the PDIA concepts of ability, authority, and acceptance facilitates planning and strategy implementation to reduce risk of sustainability and scale-out failure.	Andrews et al. (2015); Report Chapter 9.3
Sustainability and scale-out requires systemic support from government, the primary authorisers.	Timperley and Alton-Lee (2008)
Reform acceptance and ownership is necessary; reform owned/accepted by districts, schools, teachers who have the authority and the capacity to achieve sustainability and scale-out.	Coburn (2003); Cannon, Arlianti, and Riu (2014)
Policy, planning and design for sustainability and scale-out	
The success of policy interventions to achieve sustainability and scale-out depends on the extent to which four conditions are met: depth; sustainability; spread (scale-out); shift in reform ownership.	Coburn (2003)

Criteria	Sources: reviews and studies
Sustainability and scale-out requires deep change in classroom practice that alters teachers' mindsets and understanding of the principles of teaching and learning; strong pedagogical content knowledge base to inform principles-based changes to practice, and skills to enquire into the impact of their teaching on student learning.	Coburn (2003); Timperley and Alton-Lee (2008); Timperley et al. (2007); Cannon (2012)
Indonesian evidence reveals a pattern of factors that are associated with success and failure of sustainability and scale-out.	Jessyca (2013); Cannon (2017); Cannon, Arlianti, and Riu (2014)
Sustainability and scale-out are likely achievable when: (a) 'pre-conditions' are met for effectiveness; (b) implementation works within communities of practice; (c) it is based on principles drawn from education and development.	(Cannon and Arlianti 2008; Cannon, Arlianti, and Riu 2014)
The absence of sustainable links in the chain of organisational arrangements, are impediments to the transfer of learning, the development of educational organisations, and sustainability and scale-out.	Cannon (2001)
Cascade approaches to CPD present a serious risk to achieving sustainability and scale-out but can succeed if carefully designed and implemented.	Hayes (2000); Allaburton and Scheding (2007); Shaeffer (2013)
Achieving sustainability and scale-out requires a developmental approach and be cyclical; ongoing; with follow-up mentoring. The most effective schools drop to average effectiveness where improvement efforts not implemented on a continuous basis.	Courtney (2007); Timperley et al. (2007, 2011); Heyward, Cannon, Sarjono (2011); Creemers and Kyriakides, (2012)
Educational gains are often not sustained and 'fade-out' of gains may occur within one year. A precursor to fade-out is the related idea of changes 'plateauing'.	The Mitchell Group (2007); Evans (2012); Evans and Popova (2016); Cilliers et al. (2019)
Professional learning requirements for sustainability and scale-out	
Professional learning required for sustainability and scale-out occurs best at school level and in communities of practice. Operational/maintenance structures do not cope well with the demands of development; achieving maintenance and development goals in the one organisational structure means they usually do neither satisfactorily, hence the need for communities of practice.	Reid and Kleinhenz (2015); Timperley et al. (2007, 2011); Kennedy (2016); Heyward, Cannon, and Sarjono (2011); Creemers and Kyriakides (2012)
Short-term program impacts do not mean that the intervention will work at scale, or be sustainable	Reid and Kleinhenz (2015)
Sustainability and scale-out more likely when working groups (KKG) are used; a locally developed educational institution/structure that has demonstrated sustained contributions since the late 1970s.	Malcolm (1998); Cannon and Arlianti (2008)
To facilitate transfer from CPD to workplaces and sustainability and scale-out, a 'Transfer of training audit tool' is available.	McDonald (2014)

Criteria	Sources: reviews and studies
Achieving likely sustainability (from East Java case studies)	
Pilot design; pilot implementation; educational leadership; CPD through KKG; school practices; learning and teaching practices; appropriate technology; GESI strategies in place and effective; policy and planning for sustainability and scale-out; organisational issues addressed; local finance and resources available; local ownership and participation; sustainability supports scale-out; unsustainability factors not evident	Chapter 10: Case study #1: Likely sustainability
Achieving actual sustainability (from East Java case studies)	
Perceived relevance of pilots in supporting children's learning and assisting teachers in their classroom work; teachers' mindset changes; a shift in school culture that accepts critiquing ideas; acceptance of new ideas in enhancing learning outcomes; educational leadership by principals and supervisors; ownership and responsibility for change; widespread within-school dissemination; strong social networks; parental support; the cumulative impact of changes from past development support.	Chapter 10: Case study #2: Actual sustainability

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Appendix: Case Study #1 data on sustainability and scale-out

Keys: S1, S2 = Source 1, Source 2. T=Teacher; P=Principal; D=Dinas/Depag; Doc=Document; O=Observation; I=INOVASI

Guiding questions/indicators	Y	N	N/A	U	S1	S2	Evidence/Documentary sources
PART A: EDUCATIONAL ISSUES							
Pilot design							
Does the pilot address sustainability issues?	✓				I	Doc	MoU between INOVASI and five partner districts in East Java describes commitments to sustainable outcomes from CPD; Designed to be implemented through KKG, a sustainable Indonesian institution.
Does the pilot address scale-out issues?	✓				I	Doc	Designed to be implemented through KKG hence at least minimal scale-out to several schools.
Have challenges to likely unsustainability been identified?	✓				I	Doc	Yes, from the lessons learned from first round of pilots.
Poverty, gender, ethnic and equity issues have been addressed in design.	✓				I	Doc	Pilots have units addressing issues including gender, ethnic (mother tongue) and equity issues; pilots consistent with INOVASI's guidelines.
Have beneficiary groups been defined?	✓				I	Doc	Yes, in consultation with district stakeholders.
Are 'early adopters' identified?		✓			I	Doc	Not administratively feasible; however, new districts, demonstrating early adopter-style initiatives, are seeking INOVASI's assistance.
Trainee selection processes to ensure appropriate candidates are trained.		✓			I	Doc	Not administratively feasible.
Analysis of skills and motivation.	✓				I	Doc	Partly; data collections including videoing sample of teachers.
Analysis of organisational culture.		✓			I	Doc	Not administratively feasible.
Analysis of gender and equity issues.	✓				I	Doc	Gender workshops conducted before pilots commenced.
Analysis of capacities.		✓			I	Doc	Not administratively feasible.
Is the pilot timeframe sufficient to support sustainability objectives?				✓	I	Doc	Sidoarjo: some complaints about time pressure having negative impact on learning; Pasuruan: no complaints.
Sustainability/scale-out monitoring framework proposed in the design?		✓			I	Doc	
Is it clear in the design which activities need to be continued on an ongoing basis in order to sustain benefits?	✓				I	Doc	All activities designed to be sustainable.
Expectations of the design (based on past experience) are realistic?	✓				I	Doc	Feedback confirms that expectations are realistic.

Guiding questions/indicators	Y	N	N/A	U	S1	S2	Evidence/Documentary sources
There is evidence that student learning has been well-considered in the pilot.	✓				I	Doc	All literacy and numeracy pilots are focused on improving student learning.
Teachers are supported with a relevant CPD program.	✓				I	Doc	Teacher interest, voluntary dissemination, and demand indicates program is relevant.
Have continuing training and maintenance requirements been specifically addressed?	✓				I	Doc	Facilitation and mentoring sessions are included in pilots.
Pilots are not too expensive and not too technically advanced to scale-out.	✓				D	I	However, some isolated instances of partner's facilitators implementing CPD at a technically advanced level unsuitable for teachers.
Pilot implementation							
Pilot focused on developing teachers' pedagogical content knowledge in depth.	✓				I	Doc	
Pilot developed evidence-based skills of inquiry to identify next teaching steps and to test if changes were having the desired impact on students.	✓				I	Doc	
Schools provide organisational support, shared goals to aim for, and circumstances to motivate continued improvement.	✓				P	T	Principals in case study schools support participation in pilots, application of new learning, dissemination/scale-out, both within school and through working groups. Strength of encouragement varies from passive support to strong, active principal leadership and follow up.
Teaching assets: teaching materials, text books, and equipment are managed to ensure sustainability.	✓				P	T	Observation of schools indicates assets are used, well managed and maintained
The results of assessment for feedback are being acted on in the pilot.	✓				I	T	Pilots have pre-tests and within-pilot tests to provide feedback to participants; participants teach and re-teach following feedback
Continuous monitoring and feedback are evident in the pilot.	✓				I	T	As above.
Implementation of pilot addressed local conditions/issues.	✓				I	T	This issue reviewed during preparation; teacher, principal, supervisor, and local government feedback uniformly positive about this criterion.
CPD included training in mentoring.	✓				I	F	
CPD conducted by qualified and experienced facilitators in pilot topic.	✓				I		Generally, yes; selection done collaboratively with local government stakeholders. Some disappointing outcomes, however, and a potentially weak link in the chain of events from design to outcomes.
Teachers transfer their learning to classroom practice.				✓	T	O	Variable; depends on quality of implementation and the nature of teachers' school environment.

Guiding questions/indicators	Y	N	N/A	U	S1	S2	Evidence/Documentary sources
Leadership							
Pilots involved district supervisors.	✓				I	T	Yes, supervisors generally involved in implementation and follow-up.
Kelompok kerja guru (KKG)							
CPD supported by active KKG.	✓				P	T	Varies; some KKG more active than others. Supplemented by 'KKG-Mini' in Pasuruan and Sidoarjo and KKG-Kabupaten in Pasuruan.
Cycles of inquiry and knowledge-building, were implemented in KKG.				✓	I	T	Varies; Sidoarjo only 2/10 KKG teach in cycles, others teach in blocks.
KKG is a local resource of quality that teachers use to improve their teaching.				✓	I	T	Quality of activities and leadership of KKG is highly variable.
Schools							
Adjacent schools work in partnership to support each other.	✓				P	T	Uncommon; some interaction occurs through KKG; occurs between adjacent MI when the KKM is not functioning in Pasuruan.
Dissemination within school occurs for teaching staff.	✓				P	T	Very common, widespread practice, in-school mechanism is commonly designated as KKG-Mini.
Scale-out within school planned for school committee, parents, community.		✓			P	T	Does happen in rare cases; not common.
Schools demonstrate 'bottom – up' commitment: use their funds and elect to participate in activities.	✓				I	P	Very strong enthusiasm and commitment evident among pilot participants; funding from BOS, BOSDA and teachers' contributions.
Schools demonstrate 'sideways-in' change push by communities of practice.	✓				P	T	KKG participation; several principals demonstrate leadership by inviting speakers from wider community to contribute to CPD.
Learning and teaching							
Evidence of student learning outcomes is available.	✓				P	T	Principals' and teachers' claims about student learning outcomes in literacy and numeracy improving is consistently positive. No evidence of recorded scores. Student work indicate good quality is being produced
Student learning outcomes can be described as: None Uncertain Outstanding 1 2 (3) 4 5	✓				P	T	As above; learning outcomes from principals' and teachers' comments are consistently positive; comments are supported by evidence of students' work and observation of students' responses in class. Uncertain because of lack of empirical data in schools.
Student satisfaction with pilot is: None Uncertain Outstanding 1 2 (3) 4 5				✓		T	Teachers report student satisfaction; satisfaction also appears to be very positive but could only be inferred by observation of students; question not pursued directly with children during classroom observations.

Guiding questions/indicators	Y	N	N/A	U	S1	S2	Evidence/Documentary sources
Teacher satisfaction with pilot is None Uncertain Outstanding 1 2 3 (4) 5	✓				P	T	Only two negative comments made by participants from nine schools: one about grantee's poor implementation performance, another about time pressures.
Principal satisfaction with pilot is None Uncertain Outstanding 1 2 3 (4) 5	✓				P		Uniformly positive feedback.
Supervisor satisfaction with pilot is None Uncertain Outstanding 1 2 (3) 4 5	✓				D	P	Uniformly positive feedback.
School community (parents, committee) satisfaction with pilot is: None Uncertain Outstanding 1 2 (3) 4 5				✓	P		Not explored. In three schools, positive observations were volunteered about the role of the Paguyuban Kelas in support of student learning.
Physical evidence of pilot outcomes is None Uncertain Outstanding 1 2 3 (4) 5	✓				O		Evidence in the form of students' worksheets, teaching materials and books, and physical condition of classrooms is a positive indicator.
Teachers' have understanding and mindset of continuing learning and improvement is: None Uncertain Outstanding 1 2 3 (4) 5	✓				P	T	Very positive indicators: capacity to engage in deep analysis of teaching and learning issues during visits; unsolicited requests for further CPD in literacy and numeracy.
Technology							
Technology is appropriate (relevant, simple, affordable, adequate)	✓				P	T	
Is technology of appropriate quality?	✓				P	T	
Gender and social inclusion (GESI)							
Have social, gender and cultural issues been assessed in the design?	✓				I	Doc	
Have gender strategies been proposed which will enhance the participation of both men and women in all activities?	✓				I	Doc	

Guiding questions/indicators	Y	N	N/A	U	S1	S2	Evidence/Documentary Sources
PART B: GOVERNANCE AND MANAGEMENT							
Policy framework and planning							
Pilot consistent with government policies?	✓				I	D	Yes, at national and district levels; pilots prepared in consultation with local government and stakeholders.
Linkages between policies and pilot evident?	✓				I	Doc	Yes, but linkages remain weak and need strengthening.
Strategic plans for sustainability in place?	✓				D	I	Sustainability and scale-out integrated in INOVASI policy document; weak at district level – plans in each district.
Strategic plans for scale-out in place?	✓				D	I	As above.
Systemic policy/support from jurisdictions at national, provincial and district?	✓				D	I	Yes, pilots supported systemically by national and district policies and funding; provincial does not have appropriate jurisdiction but demonstrates support also.
District governments adopt policy to support learning outcomes.	✓				D	I	District governments of Pasuruan and Sidoarjo adopt policies to support learning outcomes.
National and sub-national stakeholders have access to emerging evidence of what does and does not work to improve learning outcomes	✓				D	I	Yes; variety of sources produced and widely distributed to stakeholders.
Organisational issues							
Does the pilot address organisational strengthening needs within the implementing agencies?	✓				D	I	Indirectly; some assistance to Sidoarjo district office in policy development; District office in Pasuruan strengthened CPD by own initiative in establishing KKG-Kabupaten.
Has local institutional and absorptive capacity been assessed?		✓			D	I	
Community linkages (social capital: willingness to share information, reinforcing social networks).	✓				D	I	Evident in Showcase events; facilitators voluntarily extending networks beyond their own areas; use of digital technology to build virtual networks for sharing.
The pilot builds on local initiatives and financial commitments already made.	✓				D	I	See above. Yes; teachers and principals make frequent reference to local initiatives (e.g., KKG-Kabupaten in Pasuruan) and past commitments in previous donor projects.
Changes reflected in governance.				✓	D	I	
Strong social capital; represented by will to improve education, strong leadership, strong organisations.	✓				D	I	Yes; particularly evident in some schools but also in district education offices. Religious affairs offices in both districts presents as comparatively weak and lacking in financial resources.
Finance and resources							
Finance responsibility changes from INOVASI to local sources.	✓				D	I	During case study visits absence of requests for more funds and/or more projects,

Guiding questions/indicators	Y	N	N/A	U	S1	S2	Evidence/Documentary Sources
							indicates local ownership and financial responsibility; both districts providing financial support for district facilitators.
Budget survives annual cycles/review.	✓				D	I	As above.
Local implementing agencies can access finance from 'own' sources during and after implementation?	✓				D	I	As above.
The training strategy makes maximum use of in-country resources, including the use of local training agencies.	✓				D	I	Funding, personnel and facilities are provided locally.
Diversified funding streams available	✓				D	I	
Likely source of funds for recurrent cost financing is described.	✓				D	I	
Ownership and local participation							
High level support is demonstrated; are senior representatives ('authorisers') of stakeholder groups clearly supportive?				✓	D	I	Highest level support is variable; national-level support from the Ministry of Education and Culture is clear. Local political support evident but varies according to personalities and local politics; support within Dinas local government varies.
Is there a 'champion' with capacity to promote sustainability/scale-out?	✓				D	I	Not one, but many in local government and in schools. Some groups of facilitators collectively 'champion' change and sustainability in Pasuruan.
Community consultation process has been undertaken in preparing the pilot	✓				I	Doc	
Stakeholders are well-informed about scope of pilot and expected benefits	✓				P	T	
The involvement of private sector and civil society been integrated into design?	✓				D	I	Yes, Islamic organisations and universities.
Participatory M&E activities in place?	✓				I		Yes; teacher reflection and feedback built into pilots.
Succession planning in place				✓	D	I	Only evidence is from one school where teachers are replaced only by those selected to match qualities required for the replacement role.
Linkages to other organisations/partners	✓				I	Doc	Cooperation between district education office and religious affairs office is strong; links to universities and NGOs in evidence.
Stakeholder ownership in the pilot	✓				D	I	Districts, facilitators, and teachers are collaborating with INOVASI and grantees in the development of materials sometimes initiating the development of their own materials for CPD.
Change survives key personnel change	✓				D	P	
Summary: Ownership shifted from INOVASI to districts, schools, teachers	✓				O		

Guiding questions/indicators	Y	N	N/A	U	S1	S2	Evidence/Documentary Sources
PART C: SUSTAINABILITY ISSUES							
Sustainability of the benefits							
Sustainability: Is there evidence of likely sustainability of the benefits?	✓				O		Likely sustainability is observable in classrooms of participants as well as in classrooms of those who have been disseminated to.
Sustainability: Is there evidence of actual sustainability from past support?	✓				O		Change is sustained in original schools. In both Sidoarjo and Pasuruan change has been sustained from earlier projects.
Dynamic sustainability: adaptation and advancement of benefits?	✓				O		Yes.
Has deepening occurred – greater depth of commitment, understanding?	✓				O	T	Yes; this is evident in teaching and teachers' explanations of their teaching.
Conflict present over project matters		✓			O		None observed or reported in any case study schools.
Information is being disseminated locally by: print/TV/online/showcases/ other:	✓				O	Doc	
There is a recent history >3 years of commitment to sustaining change here	✓				O		Both districts and some teachers/principals have been involved in donor-supported programs for many years, as far back to CBSA, 1980
Teachers have strong support networks	✓				O	T	Yes, widespread working groups; facilitators and social media/WA informal networks.
Scale-out of benefits							
Scale-out: What is the reach of the benefits spatially: extent of scale-out?	✓				D	Doc	Refer to Tables 9 and 10.
Scale-out indicated by the spread of underlying beliefs and principles to more classrooms and schools	✓				I	O	Observational evidence indicates (a) teachers have a strong belief in what they are now teaching is beneficial (b) teachers now discussing teaching and literacy issues in deeper and principled ways.
Mainstreaming: Have benefits been mainstreamed/institutionalised?	✓				D	O	Requires benefits to be sustainable (time) and disseminated (scale-out) and anchored in policy and resources.
Unsustainability/scale-out							
Evidence of declines in local participation and support for pilot?		✓			I	O	
Evidence of declining financial support?		✓			I	O	
Evidence of lack of progress in achieving key commitments?		✓			I	O	
No improvement evident in the situation for groups such as women, children with special needs, minorities.		✓			I	O	
Adverse changes in student learning		✓			I	O	

Guiding questions/indicators	Y	N	N/A	U	S1	S2	Evidence/Documentary Sources
Evidence of adverse changes in organisational/institutional capacity.		✓			I	O	
Evidence of adverse changes in leadership/authorisers		✓			I	O	
Evidence of adverse changes in teachers' attitudes and behaviour		✓			I	O	
Evidence of adverse changes in students' learning and behaviour		✓			I	O	
Evidence of gender disparities in student learning outcomes	✓						Systematic under-performance by boys evident.

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