

Full Length Research Paper

Evaluation of professional development of MIS teachers in Jordan

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This study aimed to evaluate the impact of professional of MIS Teachers in Jordan. The findings of the study indicated that; three-quarters of Teachers, Principals and MIS supervisors agree that the MIS professional development seminars met expectations, however nearly 75% of teachers indicate that to become better teachers they required more professional development. Students and teachers in all schools indicate that limited access to or availability of technology resources, including computers, labs and the internet was a hindrance in the implementation of the MIS curriculum.

Keywords: Teacher, Students, school, Professional Development.

INTRODUCTION

Professional development refers to skills and knowledge attained for both personal development and career advancement. Professional development encompasses all types of facilitated learning opportunities, ranging from college degrees to formal coursework, conferences and informal learning opportunities situated in practice. It has been described as intensive and collaborative, ideally incorporating an evaluative stage. (Speck and Knipe, 2005). There are different approaches to professional development such as: consultation, coaching, communities of practice, reflective supervision and technical assistance. (Chapel, 2008).

Globalization, the increased importance of knowledge as a driving force in economic development, and the consequent skill-biased nature of technological changes in the workplace are putting additional pressure on national governments to modernize and revamp their secondary education systems in order to produce graduates who are well prepared for work and for further learning. In the context of the knowledge society, changing work patterns are leading to radically new approaches in the way curricular knowledge is selected, organized, and sequenced (Cuadra,2005).

Over the past decade, a several governments in low and middle income countries have implemented reforms in school curricula to support student development of knowledge economy skills. Though some of the substance and activities in the reforms vary – the majority include incorporating learning about computers, software and the internet in the classroom into existing subjects, or adding new subjects; supporting the development of individuals who can work in teams and the development of critical thinking skills; and are often driven by the concept of developing the individual for the global job market.

The literature on secondary education indicates that effective teachers are an essential ingredient for student learning. However, Cuadra notes that in the

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Abbreviations

MIS : Management Information Stream; ERfKE: Education Reform for Knowledge Economy; ESP : ERfKE Support Project; SDU : School Development Unit; COP : Community of Practice;FG : Focus Group; LT : Learning Team; PD : Professional development; KAP : knowledge, Attitude and Practice; MoE : Ministry of Education.

context of these new curricular reforms, there is a profound mismatch between learning needs, competencies, and skills demanded from students in the knowledge society and the teaching skills of secondary teachers. Education systems and institutional cultures supporting a paradigm where the teacher is seen the holder of knowledge, and the student as the recipient may hinder, or worse, undercut implementation of curriculum supporting development of knowledge economy skills. Supporting the development of the knowledge, skills and competencies required for teaching new subjects by the existing cadre of teachers is essential in supporting the effective articulation of the new curriculum at the classroom level.

Leu, (2005) notes that as curriculum reform moves toward supporting constructivist, active-learning principals for student learning, reforms should advocate matching approaches for the professional development of teachers. In other words, professional development programs should advocate and use constructivist methods in their own programs, if they expect teachers to do the same in the classroom. At the beginning of a curricular reform, the professional development of teachers may initially be 'reform-based' – focusing on curriculum understanding, ICT skills, or responses to urgent needs (Avalos, 2007). Avalos notes that over time, however, the approach can evolve into one is based on 'Teacher Development' – with the goals of supporting on-going teacher skill development, teacher empowerment, school-based PD activities and supporting the development of broader perspectives in teaching and learning. In implementing a technical reform, Leu (2005) notes the importance of attending to processes and environments that support the development of "responsible professionals who will perform well in an atmosphere of trust and support. Bahr, Monroe,

Balzotti and Eggett, (2005), Evaluated a 2-year school-based mathematics professional development program is after its first year of implementation. This program involved both preservice students and inservice teachers who cooperatively studied and applied reform pedagogy. The program resulted from the collaborative efforts of two institutions of higher education, a neighboring school district, the principal and teachers of one school within that district, and the state office of education. *Evaluation* Of the first year of the program consisted of assessing the beliefs and perceptions of both preservice students and inservice teachers, along with an assessment of the mathematical achievement of the children within the classes of those teachers. Pre- and post-assessments of the preservice students and inservice teachers' beliefs regarding reform pedagogy were administered using the IMAP [Integrating Mathematics and Pedagogy] Web-Based Beliefs Survey (2006). Likert

scale surveys were used to assess perceptions regarding course climate and participant relationships from both teacher groups. The mathematical achievement of children was assessed in three ways: The Wide Range Achievement Test-3, the Utah state criterion-referenced assessment, and performance assessments developed specifically for use at the school. Data obtained from all sources indicated positive effects upon teachers and children, thus providing substantial evidence in support of both the value of the methods course itself and the overall professional development program. Desimone et al., (2006).conducted a study titled " Are Teachers Who Need Sustained, Content-Focused Professional Development Getting It? An Administrator's Dilemma" in this study, the authors examine whether professional development in mathematics is primarily performing an educative function by addressing weak teacher preparation, or a catalytic function by serving mainly teachers who already have a strong content knowledge of mathematics. The data used are from the teacher surveys completed for the 2000 National Assessment of Educational Progress (NAEP). The analysis is conducted using multinomial logit results transformed into relative risk ratios that indicate the relative odds that a teacher will participate in sustained, medium-length or brief(mathematics) content-focused professional development. The findings of the study indicated that teachers with strong content knowledge in mathematics—measured by type of degree in mathematics and self-reported preparedness to teach different topics in mathematics—are more likely to take sustained content-focused professional development than teachers with weak content knowledge in mathematics. Thus, professional development is primarily serving teachers with already strong content area expertise in mathematics, rather than addressing content knowledge gaps for teachers less prepared to teach mathematics.

In the case of Jordan, the Education Reform for the Knowledge Economy (ERfKE) supported the introduction of a new curriculum, the Management Information Stream (MIS), for 11th and 12th graders in 2004. MIS is a new field based on the Ministry of Educations' vision of developing a skilled labor force to build a competitive edge in the global knowledge economy. This vision seeks to ensure that graduates from secondary schools have marketable skills for the growing information technology sector. MIS targets students in grades 11 and 12 and replaces the former Commercial Education in the vocational stream. The MIS stream requires students to take three core courses: 1) computerized accounting 2) management information systems, and 3) basics of management, and select from three electives: 4) computer programming, 5) e-commerce, and 6) business statistics.

Background on MIS Professional Development in Jordan

The current approach to Professional Development of MIS teachers in Jordan evolved in three phases between 2004-2007.

Phase I – Emergency Training and Cascade Phase

The Ministry of Education sought to quickly establish a teacher cadre for MIS. Teachers who were teaching mathematics in schools were given the subjects of accounting and statistics. Many existing teachers were transferred from the commercial stream of education to the MIS and were asked to switch the subjects that they were teaching to MIS subjects. Additional teachers were hired to teach business management, programming, e-commerce and management information systems. These teachers no prior knowledge of the subject and the teachers were asked or directed to teach the new subjects. Given the dire need to upgrade the teaching skills of MIS teachers in Jordan, the MOE requested the ERfKE Support Project (ESP) to develop and lead “emergency” teacher training for the new cadre of MIS teachers.

Emergency Training 2004

At the time, the MoE Training Directorate often used a cascade training paradigm when developing and implementing in-service training programs. The cascade model acts through training small groups of people on specific skills or subject matter who, in turn, train small groups of people, and so on, until functional skills are passed on to the lowest staff level. For the Emergency training, ESP trained 75 master trainers to facilitate an in-service course covering an introduction to all MIS subjects, instructional strategies and assessment methods [in a one week training]. At the end of the training of trainers, all master trainers took an exam which measured their understanding of the new subjects. The exam results showed that only 25 of the 60 master trainers trained in the training had really understood all the concepts. As such, 15 MIS supervisors (who were also expected to deliver such types of the trainings to teachers on regular basis) were added to the 25 successful TOT trainees. The team of 40 trainers reached 646 teachers through one-day subject specific trainings between Aug.-Dec. 2004. The subject specific trainings included MIS Subject Introductions; training on difficult curricular areas, and introductions to Instructional Strategies and Student Assessment.

Feedback on the trainings from trainers and trainees included: insufficient number of training hours for

concepts to be fully understood by the teachers; fear of change among teachers and principals to implement new methodologies and use new systems; cost of transportation to the training; no incentives for teachers to gain additional knowledge; unavailability of equipment and labs to practically implement the training; teaching guides for trainers not available; trainee absenteeism.

Cascade Training 2005

In September 2005, ESP reorganized a core team of 40 master trainers to demonstrate instructional strategies; ICT integration and assessment strategies in each MIS subject area. Similar to the previous years – pre and post surveys suggested that the majority of the master trainers had not mastered a subject, and that there was significant loss of information as training ‘cascaded’ through the system.

Between October – December 2005, trainers delivered one-day instructional Strategies trainings to 735 MIS teachers. The trainings covered MIS Subjects, Instructional Strategies; ICT integration; and Student Assessment To assess the impact of the training on teachers ESP conducted a KAP [Knowledge, Attitude and Practice] survey for a randomly selected number of MIS teachers. The KAP survey showed that MIS training did not have a greater impact on their instructional strategy and student assessment skills, though many teachers claimed that they are already applying some of these skills in their classrooms.

In April 2006, the ESP team also conducted a rapid evaluation of MIS teachers’ teaching practices in classrooms. For this evaluation teachers were also randomly selected. The evaluation found that the majority of teachers surveyed were not implementing appropriate instructional methodologies in their classrooms despite their trainings and teacher claims that they already knew the material. This evaluation also showed that Core Team Master Trainers – who had gone through many capacity building sessions, were themselves not gaining skills at a desired rate.

Based on the results of these surveys and another evaluation including MOE observation of teachers in the classroom, which showed similar results, the ESP and MoE decided that some thing concrete must be done that would fully satisfy the training demands and needs of the teachers. It was also decided that training content and manuals would have to be streamlined so that the master trainers could help teachers understand complex concepts easily. It was deemed necessary that an easy to implement training manual needs to be developed so that the master trainers can do a good job delivering specific trainings.

Another important decision at this point was that instead of providing lots of general trainings to MIS

teachers on an annual basis, ESP supported the provision of specific needs based trainings.

Phase II – Emergence of new thinking

During March – May, 2007, master trainers developed the 6 subject-specific training manuals for the 6 MIS subjects based on the ADDIE approach. The manuals were reviewed by ESP technical experts and finalized by the Ministry of Education. After further reflection on the failures of previous trainings – the MoE suggested that teachers should themselves select the topics where they felt they needed the most skill development. Based on this decision, a training registration form was developed which listed the various types of MIS trainings asked the teachers what training would they liked to have during the next round of trainings. The training registration form was sent to MIS teachers who listed their training priorities – and led to the development of demand / Needs Based trainings for MIS teachers between October 2006-December 2007.

Based on the training demands of the teachers, ESP and MoE organized trainings as per the subject. For examples, MIS teachers teaching programming went to the programming training and those teaching statistics went to the statistics training. These were 2-3 days intense sessions where teachers were introduced to various ways to teach their subjects effectively. The master trainers who had developed the training manuals implemented the trainings. In the first series of trainings (October – November 2006) 230 MIS teachers participated. In the second round of the training (March - April 2007) 300 teachers received the training.

In 2005-2006, in line with World Bank recommendations that ERfKE transition from supply to demand-side training, to teacher-support materials (teachers' guides), to peer-to-peer networks facilitated by school development clusters and to the creation of educational communities, ESP shifted from training to teacher professional development, from teaching strategies to teaching subject matter challenges within the MIS curriculum itself, and from training-program authoring to instructional systems design of professional development materials. These changes have been welcomed by teachers who appreciated the demand-side training, and expressed an interest in seeing a wider selection of courses available. The application was introduced to teachers during spring subject-specific training in February-March, 2007.

The subject-specific training for 2006 was launched with a workshop on Project-Based Learning. Instructional and learning systems design training continued with the completion of subject-specific training design.

ESP refined its strategy for developing an MIS learning community centered upon school and cluster-based learning teams, presenting revisions to the

Ministry for review. This strategy was integrated into the MoE strategy which emphasizes school based programs through the School Development Unit. In the Fall of 2006, ESP proposed a 48-hour program for professional development of champion teachers, subsequently approved by the MoE, February 2007. Fourteen champion teachers received the first round of training on leadership and team-building in April 2007. There were three main characteristics to this program: (a) the learning outcomes of each learning event were linked to the Jordan Teacher Professional Development Standards; (b) the delivery mode combined face-to-face training with professional led online learning events. (c) semi-structured learning events facilitated by professionals on the communities portal on knowledge areas not covered by the face-to-face training added value to the professional development programs in a very cost-effective way.

Phase III – Articulation of a Decentralized Approach to Professional Development of MIS Teachers

The evolution of the professional development strategies between 2004 – 2006 supported the development of a new professional development framework by the Jordanian Ministry of Education (MoE) for its administrative and pedagogical workforce. The new framework departs from the previous one in several major ways, including decentralizing the training function to regional and school-levels; redefining the new role of the Ministry at centre with respect to professional development; recognizing the multiple strategies for building capacity; emphasizing life-long learning as a key attribute of successful teachers in the 21st century; redefining the roles of supervisors and school principals as professional development mentors and instructional leaders and linking professional growth to grade promotions and defined career paths. In line with the new framework, the ministry - with the participation of its key stakeholders - also developed standards that define the competencies and skills that Jordanian teachers should possess. Such standards provide a form of "social contract" between the Ministry, practicing teachers, pre-service and in-service training providers and the community at large as to the quality attributes of a professional Jordanian teacher.

Outline of the ESP approach to decentralizing professional development

ESP Approach to School-based Professional Development

Throughout the world, there is a realization that traditional professional development is not effective in preparing teachers to meet the needs of their students.

Most professional development is characterized by low quality and is sporadic in nature. Traditional professional development usually occurs away from schools, away from the classroom context and challenges in which teachers are expected to apply what they learnt, and often without the necessary support to facilitate the transfer of learning. When teachers have opportunities and institutionalized structures for collaboration and knowledge sharing over issues related to instructional practice (subject-matter, pedagogy, assessment, school management, school-to-work connections, or community involvement), they tend to benefit in major ways. Collaborative institutional structures, such as communities of practice – whether bound to a school, span an entire system, or are global - provide the ideal environment for the teachers to engage in job-embedded meaningful learning; develop a sense of belonging and common purpose and focus on issues most relevant to improving student learning. Promoting communities of practice is also a cost-effective and sustainable strategy for nurturing teacher growth compared to the traditional training-only approaches. These collaborative institutional structures are therefore of value to the students, the individual practitioner, the community of fellow practitioners, and to the organization itself. The following two paragraphs will operationalize the concepts of Learning Teams and Professional Development Leadership, two of the key building blocks for building successful collaborative learning structures.

Learning Teams

MIS school-based subject matter learning teams constitute one of the most, if not *the* most-important elements of the ESP approach to practice derived job embedded teacher professional learning. A learning team is a small collaborative group of teachers who work together in a disciplined way to focus on issues related to their practice, the changes needed to improve it, and the way investments in learning team activities translate directly into improved student learning. These structures integrate learning in the everyday practices of the teachers. Learning teams have clear goals and a unified commitment to achieving these goals; are focused on improving teacher and student learning; invest in building the knowledge and skills of all their members, nurture a collaborative culture; receive external support, resources, and recognition; and are led by strong committed leaders. Learning teams differ from traditional organizational groupings such as subject matter departments in that their focus is on learning. The constitution of school-based learning teams fits appropriately with the new orientations of the Ministry of Education to decentralize professional development to the school level. They also offer the most natural missing link between the School

Development Unit (SDU), which the ministry has adopted as the central organization unit for whole school improvement, and the individual subject matter teachers.

The concept of SDU, when first discussed in 2005 was that the MoE wanted to decentralize the day-to-day management and give all school infrastructure management decisions to the head-teachers. During the same time, through ESP's technical assistance, the MoE decided to experiment with the idea of Community of Practice where in addition to day-to-day management, the school principal and teachers are also responsible for their own professional development. The MoE wanted to test the idea by introducing SDUs in 14 schools.

As part of the SDU, MoE introduced the concept of Champion Teachers for certain domains, such as Literacy, Vocational Education and Academics. The purpose of the champion teachers was to guide and develop the capacity of teachers in these domains. On the request of ESP, MoE also added a Champion Teacher for MIS.

In addition to the above, the MoE created general teaching standards for the teachers (subject specific standards are still lacking). It also created an incentives system whereby teachers are eligible for promotion within teaching ranks if they have acquired certain hours of training and have gained skills.

ESP was given the responsibility of building the capacity of SDU's MIS Champion Teachers and principals. In April 2007, ESP provided a 3 days capacity building training to all MIS Champion teachers, their principals, and the relevant MIS supervisors. The training focused on establishing, leading, managing, and nurturing instructional teams for MIS and covered assessment of professional development. The MoE itself has also taken an important step to encourage and nurture the Champion Teachers so that they will be able to do a good job, such as 50% reduction in their classroom teaching hours.

Professional Development Leadership

Strong leadership is one of the key conditions for the success of the Learning Teams at the school level. Teacher leaders with the appropriate technical, interpersonal, emotional, and ethical predispositions have significant impact on their fellow teachers. They have a strong passion for improving the lives of the students; care about the advancement of their teaching practice; have exceptional abilities to analyze students' performance problems and provide solutions for these problems; model good instructional practices; plan, manage and monitor change; respect diversity of opinion; help resolve conflict; engage in good ethical behavior; and understand the importance of community involvement. Teacher leaders spend a significant port-

ion of their working day in direct contact with teachers, in their school and classrooms. Their mission is to assist teachers in learning and applying the new knowledge and skills necessary to improve the academic performance of the students. Teacher leaders have been called different names, including mentors, coaches, instructional leaders, lead teachers, master teachers, and school-based professional developers.

METHODOLOGY

As the MoE begins to adopt a decentralized professional development approach for MIS teachers, specifically, MIS New Teacher Training; MIS Subject Specific Professional Development and the Communities of Practice pilot, it is critical to understand the perceptions on the efficacy and implementation of this new approach and better understand how the approach may or may not help address the needs and challenges teachers face in the classroom, school and broader institutional environments in which they work. This evaluation seeks to offer an assessment on the *initial* impact of the new professional development approach by eliciting the perceptions of students, teachers, principals, lead teachers and MoE supervisory staff in 34 schools (10 good technology schools, 10 weak technology schools and 14 communities of practice schools).

Evaluation Questions

The following questions provided the framework for this evaluation

- 1.) What are teacher perceptions of the New Professional Development Approach?
- 2.) What knowledge and skills are teachers developing under this new approach? How are teachers transferring and applying new skills into the classroom?
- 3.) What is the affect of Learning Teams at the School Level?
- 4.) What factors in the school/MoE institutional environment affect the professional development and successful teaching of MIS teachers?

Evaluation Timeline

The evaluation will be implemented in three phases.

1. Collection of baseline data of the evaluation sample through surveys and focus groups. This phase was

conducted September – November 2007. The interim report discusses the baseline findings.

2. Classroom observations and Focus groups to follow up on baseline survey and focus group findings. This will be conducted February – March 2008.

3. A final round of surveys and focus groups and will be conducted in April –May 2008. The purpose of the second round of data collection is to serve as a 'post-assessment' following an additional year of professional development seminars. A final report will be submitted in June 2008.

Evaluation Sample

The sample sought to elicit a variety of viewpoints on those directly involved and affected by teachers participating in MIS professional development activities. As the evaluation sought to collect perceptions of the new professional development approach, the evaluation community was restricted to schools whose teachers have gone through the new PD seminars. From these schools ESP has selected 34 schools that are divided into the below categories. An equal number of boys and girls schools were selected.

- 10 schools where the technology infrastructure is adequate
- 10 schools where technology infrastructure is not adequate or does not exist
- 14 Community of Practice (CoP) or Learning Teams schools will be targeted for the evaluation.

The rationale for subdividing schools is as follows. One, the research team wanted to ascertain whether technology infrastructure correlated with perceptions on the efficacy of professional development activities. Two, only CoP schools received CoP seminars; the evaluation team wanted to look at the learning team data collected on these schools against the other two school sub-sets. Students, Teachers and principals from all schools were surveyed. MIS Lead Teachers from COP schools were surveyed. The evaluation community was extended to principals, MIS Supervisors and head supervisors in an effort understand their perceptions on the seminars and to triangulate results. Table (1)

Data Collection

The evaluation tools were built using a combination of two evaluation models specifically the Taylor Model that evaluates effects dependant on the objectives of the program and the Hamblin Model which consists of five levels: (reflection, learning, professional behavior, performance and final value). Data were collected thro-

Table 1. Evaluation Community

Category	Number in the Evaluation Community	Total Surveys completed	Notes
MIS students	1829	723	Good: 226 surveys Weak: 213 surveys COP: 288 surveys
MIS teachers	72	54	Good: 18 surveys Weak : 20 surveys COP: 16 surveys
School Principals	34	32	Good: 9 surveys Weak : 10 surveys COP: 13 surveys
MIS lead teachers	14	14	
MIS Supervisors	12	9	
Heads of Field Directorate Supervision Sections	35	21	

ugh implementation of surveys and focus groups.

Evaluation Tools

The evaluation used the descriptive approach to evaluate the effectiveness of the professional development program, and the following tools were design to collect data.

Surveys

A- Questionnaire for the Head Supervisors

A tool was design to survey the Head of Field Directorate Supervision Sections comprising 16 questions. Questions covered feedback of the ESP seminars and type of support that they as Heads of Supervision Sections can provide.

B- Questionnaire for the MIS supervisors

There were two types of question used in this questionnaire. The first were questions that were open ended and the second showed the educational supervisors response level on the content of items on a five level scale to collect quantitative and qualitative data. The questionnaires consist of four parts.

- Part One: General Information.
- Part Two: Seminar Feedback.
- Part Three: Supervision.

- Part Four: Concepts of Learning Teams.

C- School principal questionnaire

This questionnaire consists of five parts:

- Part One: Basic information about the school and the principal.
- Part Two: Seminar Feedback.
- Part Three: Classroom Implementation
- Part Four: Supervision.
- Part Five: Learning Teams seminars, support and implementation

D- Lead teacher questionnaire

This questionnaire was directed particularly at lead teachers that were trained by the ESP project under the community of practice program (COP) and consisted of four parts:

- Part One: Basic information.
- Part Two: Feed back about the lead teacher role as a coordinator and a supporter of members of the learning team and his/her relationship with the school principal and MIS teachers.
- Part Three: Consisted of 16 items that show the lead teachers response level on COP seminars on a scale comprising 5 levels.
- Part Four: Covers reflection through quantitative data collected from the lead teacher concerning the learning teams and his/her future vision of the learning teams and how to confront the challenges they are facing.

E- MIS teacher's questionnaire

This questionnaire was designed for teachers who had been trained by the ESP project and consist of three elements:

- Part One: General information
- Part Two: Seminar feedback
- Part Three: Classroom Implementation
- Part Four: Supervision.
- Part Five: Learning teams.

F- Student questionnaire

This questionnaire was specifically designed for MIS students in schools where teachers had been trained by ESP. The questionnaire consists of two parts:

- Part One: This part covers the level of deployed technology with learning, cooperative learning by the teacher and the students attitudes towards their teachers.
- Part Two: Relates to the understanding and awareness of students of the concept of teacher learning teams.

Focus Groups

G- Focus Group Templates

Survey findings were used as a basis for the creation of focus group protocols. Focus groups were administered in late October and November 2008 with teachers and students in Good, Weak and COP schools. Fourteen (14) focus groups were implemented.

Piloting Evaluation Tools

The surveys were assessed by a number of specialists to ensure that the items are relevant and appropriate, thus ensuring validity. These tools were piloted to verify the clarity of the questionnaires and the correct language which can be understood by the teacher is used. Due to limited time available - Focus Group templates did not go through piloting.

Implementation Procedures

A group of five undergraduate researchers were chosen, trained in evaluation tools implementation and how to communicate with the evaluation sample by the evaluation team. Each researcher implemented surveys at seven schools over the course of two weeks.

Data Analysis

EXCEL and SPSS were used to analyze the quantitative data. Qualitative data was also analyzed using focus groups to uncover a deeper and precise explanation for evaluation results for each of the evaluation groups, (MIS teachers, lead teachers, learning teams and students).

Validity and Reliability

Bias

Selection bias exists in this evaluation as the evaluation team made a *purposeful sample* (rather than a *random sample*) of participants who are engaged in the professional development of MIS teachers. A selection bias also exists in the selection of Good, Weak and COP schools participating in the evaluation. Triangulation of data sources was used to verify and understand data.

Triangulation of results

Triangulation is based on the assumption that any bias inherent in particular data sources, investigator, and/or method is neutralized when used in conjunction with other methods, data sources and investigators. In the traditional sense, triangulation seeks the convergence of results because it allows overlapping data to bring different facets of the program to the surface. Where possible, researchers triangulated results in the following manner.

1. Use of multiple survey groups and sub-groups whose perception of the new professional development approach may vary. This method also captures perceptions of direct beneficiaries of the professional development approach and the perceptions of those able to comment on the affect of the new approach;
2. Interviews or focus groups discussions with evaluation participants; and
3. Document review to support/contradict stated claims.

Evaluation Limitations

Focus group discussions did not elicit the full extent of the deep and robust qualitative data sought. While FG templates were based on a preliminary analysis of survey results, a more robust analysis of survey data prior to FG implementation would have further focused focus group discussion. Also, while the interviewers were provided with question sheets to ask of the

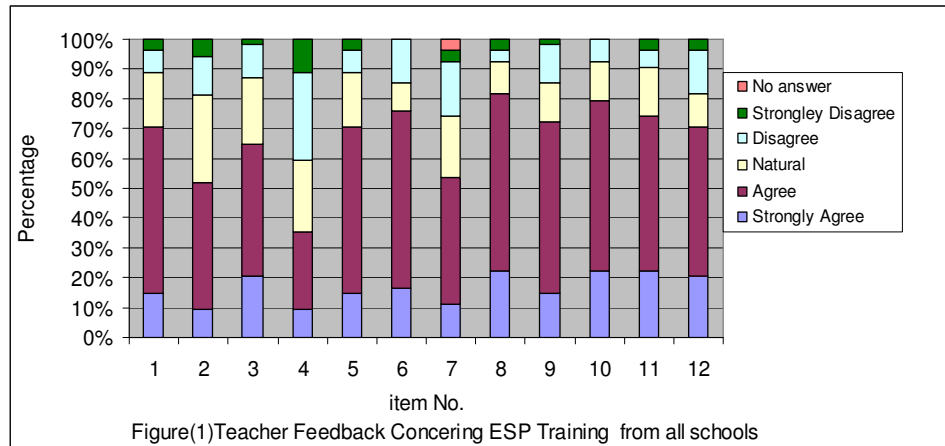


Figure 1.1 MIS Teacher perceptions on ESP professional development seminars

interviewee, there were occasions where the interviewer missed opportunities to further probe participants. Two interviewers with better skill-sets will be used in the next round of the evaluation (Feb.-Mar. 2008) to ensure consistency in the interview process.

Slightly different wording of several survey questions between surveys meant for different groups (e.g. teachers and principals) was another limitation. While the survey team was able to triangulate a significant amount of the data collected in surveys – the slightly different wording in some questions made it difficult to verify when teachers may agree with principals or MIS supervisors on some topics.

Finally, the possibility of bias of the evaluation team should be acknowledged. The evaluation team consisted of one ESP staff member, a member of AED home office staff and one consultant hired by the project to work closely with the project team.

RESULTS

Teacher Perceptions of New Professional Development Approach

Three-quarters of Teachers, Principals and MIS supervisors agree that the MIS professional development seminars met expectations, however nearly 75% of teachers indicate that to become better teachers they required more professional development. Nearly two-thirds of MIS teachers indicate that Professional Development courses they had taken were enough to improve their basic skills (65%). Fifty-four (54) percent indicated that seminars covered most of the MIS concepts that are required of them. Forty one (41) percent did not agree that the Professional Development courses covered all of the fields that are required for them to teach. Slightly over half (52%) of teachers surveyed indicated that the period of the

seminars was enough to cover all of their professional development needs.

Perceived professional development needs remain differentiated

Forty-three (43) percent of teachers surveyed indicated a need for more subject-specific seminars. Twenty percent of teachers surveyed indicated a need for more pedagogical and communities of practice seminars. Teachers in good technology and communities of practice focus groups indicated a stronger preference for CoP / pedagogical seminars than counterparts in weak technology schools. In FG discussion, teachers with more experience preferred continued self-study for developing subject matter expertise and more formalized seminars in pedagogical skills.

Teachers from COP schools were more critical of professional development seminars than teachers from good and weak technology schools. On average 10% more CoP teachers disagreed or strongly disagreed on questions relating to PD seminars compared to teachers from good and weak schools.

A frequent concern raised by teachers in all schools in surveys and FGs was that PD seminar hours did not currently count toward their professional upgrading.

Feedback and Perceptions on MIS Professional Development Seminars

Figure 1.1 outlines survey responses to 12 questions asked MIS teachers on professional development seminars supported by the Ministry of Education and the ERfKE Support Project (ESP). The figure aggregates responses from Good, Weak and COP schools. The survey used a Likert Scale to quantify response. The Likert Scale allowed teachers to stron-

gly agree, agree, be neutral, disagree, and strongly disagree with statements posed by the survey. As seen in the below figure, a small percentage of teacher also chose not to answer particular questions.

Item numbers relating to Figure 1.1

- 1) The MIS teacher seminars provided by the project met my expectations
- 2) The MIS teacher seminar time was enough to cover all my professional development needs
- 3) The number of MIS teacher seminars I have received is enough to enhance my basic skills
- 4) The MIS seminars covered most subject areas which I am required to teach in my classroom
- 5) The seminars on applying technology helped me understand the basic concepts in classes I teach.
- 6) The trainers used various technologies to help me learn the MIS concepts practically
- 7) The seminars covered most MIS concepts which I am required to teach in my classes
- 8) The MIS seminars increased my confidence in teaching MIS subjects
- 9) The materials provided during the seminars were of good quality and useful to me
- 10) The MIS concepts taught to me during the seminars have been useful and I have applied them while teaching in my classroom
- 11) The seminars taught me to use student centered teaching methods
- 12) The seminars taught me to learn from and share MIS teaching techniques with other MIS teachers in my school.

Over 70% of teachers Strongly Agreed or Agreed on eight of twelve items indicating generally positive feedback on the implementation, content and outcomes of ESP seminars. Sixty-five (65) percent of teachers attending seminars indicate improvement in their basic skills; 72% agree that materials and resources provided are helpful and that they appreciate the use of modern teaching methods (e.g. use of technology / applications). Corroborating teacher responses, over 70% of principals and MIS supervisors indicated the seminars and the materials provided met their expectations. In items related to professional development seminars, Principals and MIS supervisors were more likely to offer a positive Strongly Agree or Agree response (73%) compared to MIS teachers (62%).

Items 2 and 4 generated the lowest percentage of teachers in agreement with statements. Fifty-two percent of teachers indicated that the period of the seminars were sufficient to cover their professional development needs (Item 2), and only thirty five (35) percent of teachers indicated that the Professional Development courses covered most of the *fields* that are required for teachers to teach (Item 4). In both

questions, the low aggregate percentage was drawn down by responses from COP teachers. In item 2, 61% of teachers from good schools and 60% of teachers from weak schools indicated a positive response compared to 31% of teachers in COP schools. Likewise, in item 4, sixty-one (61) percent of teachers from good schools indicated a positive response, compared to 40% in weak schools and 0% in COP schools. For item 4, sixty-three (63) percent of teachers from COP schools disagreed with the statement that Professional Development courses covered most of the *fields* that are required for teachers to teach. Survey and FG results did not explain this finding.

Nearly two-thirds (65%) of MIS teachers indicate that Professional Development courses taken by MIS teachers was enough to improve basic skills (Item 3) compared to 55% of MIS supervisors. Fifty-four (54) percent of MIS teachers indicated that seminars covered most of the *MIS concepts* that are required of them (item 7) compared to 75% of MIS supervisors. COP teacher positive responses registered below those from good and weak schools on these two items by an average 12%.

Differences between Good, Weak and COP Schools

As suggested above, teachers from COP schools were more critical of professional development seminars than teachers from good and weak technology schools. On average 10% more CoP teachers disagreed or strongly disagreed on items relating to MIS seminars. Figure 1.2 and 1.3 share responses from Good, Weak and COP schools for items 2, 4 and 5. On most other seminar related items – teacher responses between different schools aligned.

As noted above, on items 2 and 4, COP teachers agreeing that seminars cover professional development needs and concepts are less than half of that in Good and weak schools. On item 5, 38% of CoP teacher either disagree or strongly disagree that seminars on basic technology helped them understand the basic concepts in the classes they teach. Survey findings will be investigated in February 2008 FGs.

It should be noted that the profiles of MIS teachers at different schools differed in years of teaching experience and in exposure to ICDL. Seventy percent (70) of teachers in good schools and 60% of teachers in weak schools have more than four years of experience compared to 25% of teachers in COP schools. Although it should be noted that since MIS is a new curriculum most concepts will be new to all teachers. Additionally, 62% of teachers in good school have taken ICDL compared to 25% of teachers in weak schools and COP schools.

Among the concerns raised by teachers about the seminars were: the opportunity to count seminar hours

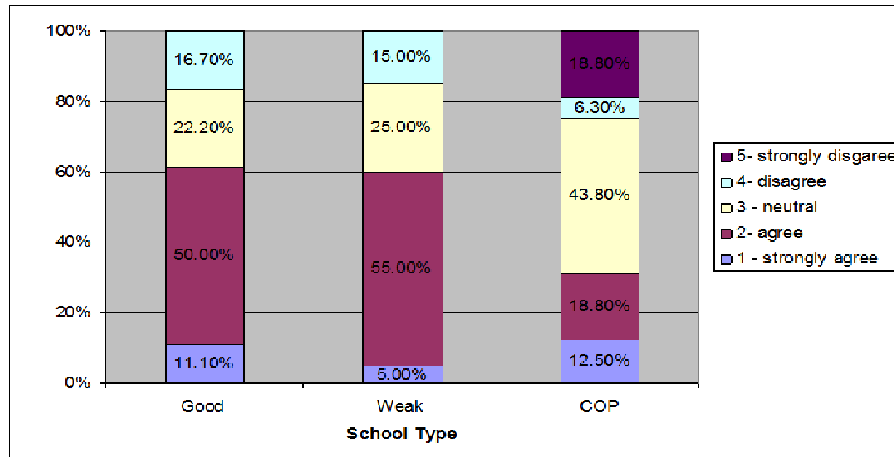


Figure 1.2. Teacher responses to item 2 in Good, Weak and COP Schools
Question 2 "The MIS teacher training time was enough to cover all my training needs."

Table 2. Teacher interest in further professional development "I need the following seminars to be a good MIS teacher."

Seminar Topic	Number	Percentage
Methodology / Pedagogy	12	28%
e-commerce	9	21%
MIS	6	14%
Programming	6	14%
Accounting	5	12%
Internet	3	7%
Maintenance	2	5%

toward their professional upgrading; and a desire for more frequent seminar follow-up such as direct instructional support from the MoE and ESP technical staff. Teachers also indicated that securing transport to the seminars remained an issue and that seminars should take place before the initiation of the school-year. Teachers and supervisors disagreed about when seminars should occur. Teachers prefer they occur during school hours while Supervisors prefer seminars occur outside of school hours or over holidays. Teachers in FGs indicated that one possible explanation is that supervisors prefer that teachers be available to students during school hours. Teachers in one FG commented, "We don't like going to training after-work hours – but the principal won't let us take work hours for training."

Interest in Future Seminars

Seventy-two (72) percent of teachers surveyed indicated a need for more professional development in

order to be a good MIS teacher. Professional development seminars desired by teachers is outlined in Table (2). Even so, perceived professional development needs remain differentiated. Forty-three (43) percent of teachers surveyed indicated a need for more subject-specific seminars. The most requested subjects include: e-commerce, MIS, Programming and Accounting. Teachers in seven of eight FGs indicated a desire for subject specific seminars – often in new software applications. Teachers in weak technology schools or in good technology schools with poor computer lab access prioritized subject specific seminars over pedagogical or other professional development.

Twenty percent of teachers surveyed indicated a need for more professional development in pedagogical methods and communities of practice. Seminars requested included: instructional design, student learning, assessment strategies and CoP seminars. Teachers in good technology and communities of practice focus groups indicated a stronger preference for CoP / pedagogical seminars than counterparts in weak technology schools. Often, teachers with more experience preferred continued self-study for developing subject matter expertise and more formalized seminars in pedagogical skills. (Question T-12) One rationale offered by teachers was that they could learn new technical material and software applications on their own.

Perceptions on Professional Development / PD Model

Nearly all teachers in all schools are aware of the new seminars. Additionally, several FG teachers in Good and Weak schools are aware of COP seminars. Although survey questions and FG discussion did not

request that teachers differentiate between ESP seminars and other PD seminars – teachers often referred to practices supported by the new PD approach, including: a focus on practical application of subject matter as opposed to a theoretical aspects of the curriculum and the support of teachers with learning resources supporting student-centered learning. However, most teachers did not speak in terms of a new framework or approach to professional development approach, and unless otherwise prompted, comments relating to professional development addressed seminar conditions and content.

FG discussions indicated that teachers considered a variety of methods for supporting their own professional development including: the availability of more resources at the school level (including software applications and manuals), access to online courses (both this method and the latter supporting 'self-study') in subject matter, and opportunities to take a diploma course in technology, or take courses in general education courses at the local university.

Teacher Knowledge and Skill Development; Transfer to the Classroom

Main Evaluation Results – Section 2

A minority of students (41%) indicate that teachers give them enough time to use computers during MIS classes. In three questions regarding the use of technology in the classroom to support teaching MIS an average of 64% of students indicated that technology was used in the classroom to support MIS curriculum. In student responses, there was little variance between Good, Weak and COP schools.

Students and teachers in all schools indicate that limited access to or availability of technology resources, including computers, labs and the internet, was a significant hindrance in the implementation of the MIS curriculum. In one finding, only 44% of students indicated that there are enough computers in MIS classrooms. There is little variance in this finding between Good, Weak and COP schools despite the technology profiles suggesting otherwise. FG discussion indicated that while some good schools may have a good student-to-computer ratio – poor scheduling or prioritization of labs to non-MIS teachers by principals' limited MIS student access to computer labs.

Eighty percent of teachers indicate that PD seminars helped them use PD concepts and student centered methods in the classroom. Sixty two (62) percent of students agreed that teachers encourage them to work as teams. In CoP schools, 72% of students Strongly Agreed or Agreed that teachers encourage them to

work as teams compared with 55% in Good and weak schools.

Classroom Application of New Skills

Pedagogy

An average of 80% of teachers strongly agreed or agreed that they applied concepts and methods learned in seminars in the classroom. The range in Strongly Agree/Agree responses between Good, Weak and COP schools was from 72% - 90%. Teachers (82%) and Principals (75%) indicated that seminars improved teachers' confidence in teaching MIS. However, in weak schools, 30% of principals disagreed or strongly disagreed with this statement, compared to 11% and 15% in good and COP schools, respectively.

Sixty two (62) percent of students agreed that teachers encourage them to work as teams. In CoP schools, 72% of students SA/A that teachers encourage them to work as teams compared with 55% in Good and Weak schools. In an open-ended survey question – the several students in all schools indicated that they wanted teachers to spend more time explaining textbook concepts. One possible explanation for this is that Twajih exams focus on the theoretical knowledge outlined in the textbook rather than practical application required in MIS subjects.

In two FGs in Good technology schools, teachers indicated that seminars helped them become less reliant on the textbook for teaching, and that, in some cases, their role had transitioned to that of a facilitator. Teachers in one FG noted.

After training we are 100% different. We didn't understand the curriculum before the training or how to plan for class. Before we taught the curriculum [from the book] cover to cover] – now we use many tools. The role of the student has also changed. They are more active. Before all students looked to teachers for knowledge – now they share the burden of bringing in resources.

Students in the same schools indicated their reasons for taking the MIS stream included MIS teachers having a better reputation for encouraging student participation and noted that teachers were implementing role-playing, Project-based learning and case study activities in the classroom. The schools sharing the above feedback may be *exceptional* examples of teachers using new pedagogies in the classroom. In most other FG discussions teachers did not indicate a change in their role as a teachers – though several teachers noted that students often knew technology applications better than they did. The extent to which use of new pedagogies is the norm, rather than the exception, will be documented in classroom observations.

Technology Application

A minority of students (41%) indicate that teachers give them enough time to use computers during MIS classes. (S-6a) Forty-one (41) percent of students also disagreed with this statement. In three questions regarding the use of technology in the classroom to support teaching MIS an average of 64% of students indicated that technology was used in the classroom to support MIS curriculum. In student responses, there was little variance between Good, Weak and COP schools. A significantly larger percentage of teachers (87%) said they use computers to teach MIS. Fifty-seven (57) of teachers said they use datashows; 7% indicated they use ITAC software and the internet. Teachers noted that technology instruction focused on teaching students ITAC, PowerPoint and Access

In Good, Weak and COP schools, students in written answers indicate they wanted more time on the computers (as there are often 3 students per computer), and that teachers were unable to provide them with the resources they need to accomplish their work. (QS-17) MIS supervisors offered an outlying response with 89% indicating that the seminars supported teacher use using technology to teach basic concepts.

Resource Issues

A minority of students (44%) indicated that there are enough computers in MIS classrooms. In nearly all Focus Groups - teachers indicated that lack of appropriate technology or access to technology resources in the school was one of the greatest impediments to their implementation of new curriculum and pedagogies. Student survey corroborate this discussion with students in Good, Weak and COP schools indicating that main challenges in implementing project based learning were high student-to-computer ratios and limited resources. (Q S-11). In one weak school focus group teachers indicated *"Training is not helpful if there are no resources."* When asked about resources pupils in a COP school further noted *"No, internet is not available and if it is available it is too slow and there isn't enough computers and labs."*

Teachers at all schools indicated at least one of the following challenges: limited access to computer labs, inadequate lab space, severely malfunctioning equipment, and inconsistent connectivity to Eduwave. Teachers in one FG noted: *"Sometimes we ask students to go to the internet café to get resources since the technology is not available at school. If we ask students more than once – parents come yelling saying 'we don't have the money'."* In one FG, four of six teachers indicated teaching the ITAC accounting software from the textbook (rather than using the application). FG discussion indicated that while some

good schools may have a good student-to-computer ratio – poor scheduling or prioritization of labs to non-MIS teachers by principals' limited MIS student access to computer labs. Amman FG teachers noted, *"[We are] not allowed to use computers / internet. From 8-2pm labs are filled with IT teachers."*

Increasing numbers of students enrolling in MIS stream seem to be stretching resources even further. Teachers in Al Anjera noted, *"We have two grade 11 classes, 47 [students] in each class; and two grade 12 with 34 in each class. The number of classes per teacher is too high - it will be very high next year with three classes of grade 11."* Teachers in another FG echoed these concerns saying, *"All MIS teachers are overloaded with classes – with no one to help them [5 classes covering 16-21 hrs/week]."*

Teachers prioritized technology requirements as needing more computers, better access to labs, and better connectivity. Champion teachers in COP schools indicated that in order to be a good lead teacher they needed the following resources (in order of priority): Laptop; MIS lab; Datashow; Digital camera; and access to the internet (CT-24).

New Skill Development

Survey and Focus Group data are not adequate for informing on teacher demonstration of new skills in the classroom. Given the variation in the school technology infrastructure and teacher academic and classroom experience, the evaluation team has developed a classroom observation tool that will seek to better identify demonstration of seminar knowledge and skills in the classroom. Classroom observations will occur during February and March 2008.

Impact of Learning Teams at the School Level

Main Evaluation Results – Section 3

Learning Teams and Lead Teachers exist in all COP schools and in several of the good and weak schools surveyed. However, Learning Teams meet much more frequently and more frequently discuss issues related to student learning and teacher professional development in COP schools than in Good and Weak technology schools. Learning teams meet on at least a monthly basis in 94% of COP schools compared to 44% and 45% of good and weak schools respectively. Seventy-five (75) percent of learning teams in COP schools regularly discuss issues related to *student assessment and learning* compared to 58% in good schools and 45% in weak schools. Sixty-six (66) percent of Learning Teams in COP schools regularly discuss issues related to *teacher performance and teacher professional development* compared to 50% and 29%

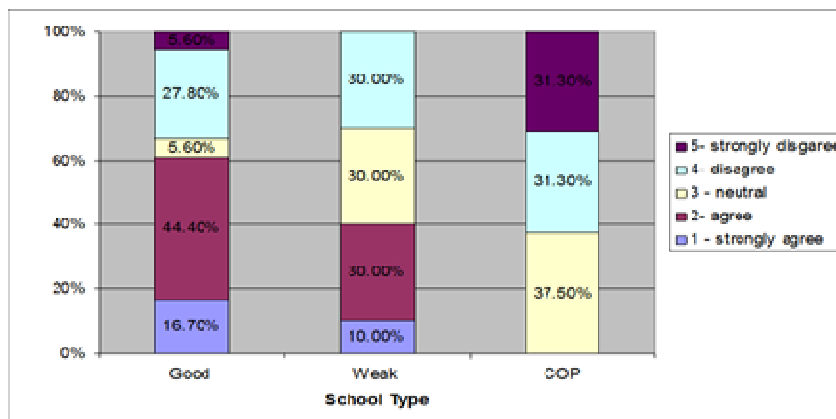


Figure 1.3 Teacher responses to item 4 in Good, Weak and COP Schools
 “The MIS seminars covered most subject areas which I am required to teach in my classroom”

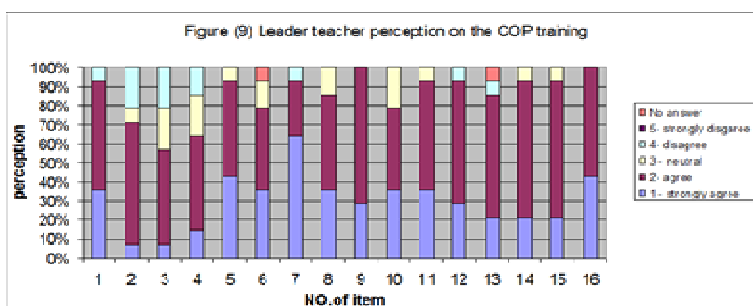


Figure 3.1 Lead Teacher perceptions on Learning Team Seminars

in good and weak schools.

Lead Teachers (100%) and Principals (77%) in COP schools agree think the learning team concept is a good method to facilitate teachers helping one and other, with COP teachers indicating that the LT concept is good and applicable to their situation in Jordan. Sixty-seven (67) of principals in good schools and 50% in weak schools agree that the learning team concept is good. Eighty-four (84) percent of COP principals Strongly Agree /Agree that MIS teachers are fully capable of working together to make good academic decisions. Lead teacher implementation of learning teams in COP schools is seen as supporting the professional development of learning team teachers by principals and teachers. Sixty-one (61) percent of principals and 64% of teachers indicate that the Lead Teacher is helping Learning Team LT teachers professionally. Fifty-three percent of teachers indicate the lead teacher helps them in planning and in sharing information from seminars.

Lead teachers indicate that Learning teams are best for supporting teamwork and improving learning strategies, and less helpful in developing individual

subject-matter expertise. Lead teachers indicate that Learning Teams are best for solving the following problems (CT-20) of Teamwork (86%) and communication (79%); improving learning strategies (79%) and clarifying subject concepts, 57%.

The Learning Team concept may be able to work in other schools and with teachers in other subject areas. COP Principals (54%) and Lead teachers (42%) note that MIS Learning Team activities have played a role in helping other teachers initiate learning teams at the COP school. In Good, Weak and COP schools, teachers Strongly Agree/Agree that they share PD techniques learned in seminars with other teachers (Good: 78%, Weak: 80%, COP: 63%).

Feedback and Perceptions on Learning Team Seminars

Figure 3.1 outlines survey responses to 16 questions asked Lead Teachers on Learning Team Seminars. The survey used a Likert Scale to quantify response. The

Likert Scale allowed teachers to strongly agree, agree, be neutral, disagree, and strongly disagree with statements posed by the survey. As seen in the below figure, a small percentage of teacher also chose not to answer particular questions.

Key to above table showing questions asked

- 1) The MIS Champion teacher seminars provided by the project met my expectations
- 2) The Champion teacher seminar time was enough to cover all my professional development needs.
- 3) I believe that COP professional development I had was enough
- 4) The think the lead teacher seminar material was enough to help other teachers.
- 5) The Champion teacher seminars helped me better understand the basic concepts of peer coaching through adopting good communication skills
- 6) The trainers used various methodologies to help me learn the peer coaching concepts practically
- 7) The COP seminars increased my confidence in helping my teachers for teaching MIS subjects effectively
- 8) The seminar materials provided during the training were of good quality and useful to me
- 9) The Learning Teams' concepts taught to me during the seminars have been useful and I have applied them while helping my teachers
- 10) The training taught me to learn from and share MIS teaching techniques with other MIS teachers in my school
- 11) My MIS supervisor has helped me and has encouraged me to help other MIS teachers in my school
- 12) My principal has helped me to help other MIS teachers in my school
- 13) MIS teachers in my school like to attend the Learning Team sessions
- 14) I believe that MIS teachers in my school have better teaching skills than other teachers because of our weekly Learning Team activities
- 15) Learning Team activities have improved communication skills of my MIS teachers
- 16) Now I am better prepared to define and solve the problems of my MIS teachers

Over 70% lead teachers indicated a strongly agree or agree response in 14 of 16 items. Lead teachers were most critical of the seminar period (item2), the amount of professional development (item 3), and the sufficiency of seminar materials (item 4) – with an average of 64% strongly agreeing or agreeing on these items. At the most, only 21% of those surveyed disagreed or strongly disagreed with any one item. All but one lead teacher surveyed said the seminars met expectation and helped them understand basic

concepts of co-equal training. Sixty-nine (69) of COP principals Strongly Agreed/Agreed that the amount of PD seminars provided lead teachers is enough. Lead teachers would prefer to broaden participation in future CoP seminars to include all learning team members, school principals, and non-MIS teachers and prioritized CoP seminars over subject specific seminars – indicating a desire for seminars in leadership; instructional design; and data driven decision making. FG discussion corroborated survey findings and further suggested lead teachers would like more professional development on software applications and learning strategies. Main concepts remembered from seminars include the role of the lead teacher, change management, action plan, institutional culture and learning team (LT-26)

Learning Team Implementation

Learning Team Concept

Lead Teachers (100%) and Principals (77%) in COP schools think the learning team concept is a good method to facilitate teachers helping one and other, with COP teachers indicating that the LT concept is good and applicable to their situation in Jordan. Sixty-seven (67) of principals in good schools and 50% in weak schools agree that the learning team concept is good. Eighty-four (84) percent of COP principals indicated that MIS teachers are fully capable of working together to make good academic decisions.

Learning Team meeting

Learning Teams and Lead Teachers exist in all COP schools and in several of the Good and Weak schools surveyed. However, Learning Teams meet much more frequently and more frequently discuss issues related to student learning and teacher professional development in COP schools than in good and weak technology schools. Learning teams meet on at least a monthly basis in 94% of COP schools compared to 44% and 45% of good and weak schools respectively.

Seventy-five (75) percent of learning teams in COP schools regularly discuss issues related to *student assessment and learning* compared to 58% in good schools and 45% in weak schools. Sixty-six (66) percent of Learning Teams in COP schools regularly discuss issues related *teacher performance and teacher professional development* compared to 50% and 29% in good and weak schools. Ninety-three (93) percent of CoP learning team teachers indicate they work together to address student problems compared to 61% in other schools. Table 3 and Figure 3.2 outline the data between COP, Good and Weak schools.

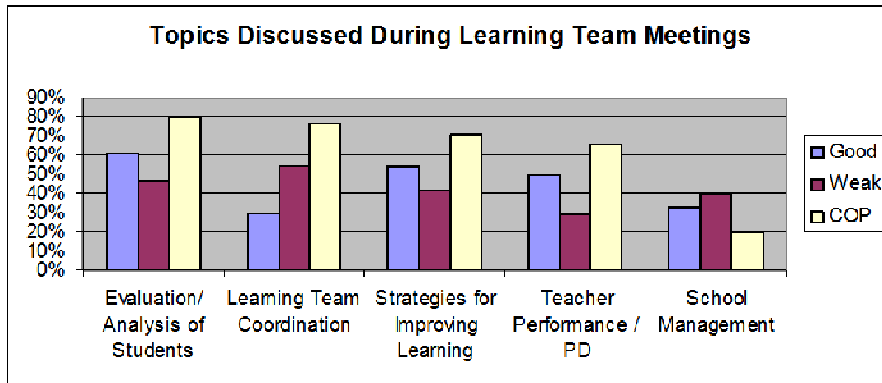


Figure 3.2 represents an aggregate of three different questions

Table 3. Frequency of Learning Team Meetings

The learning team gets together to learn from the lead teacher (T-25).	COP	Good	Weak
Weekly	67%	33%	25%
Monthly	27%	11%	20%
Less than monthly / Never	6%	56%	55%

- The most important topics we discuss in our meetings are (T-23C);
- The most important thing we usually discuss in our learning team meeting is (T-28C); and
- We usually get together as a learning team to solve the problems related to (T29-C).

The FG with COP Learning Team teachers in the Tafila added specificity to the topics teachers discuss in Learning Team meetings.

We conduct action research to solve teachers' problems in controlling students in the classroom...and we want to study factors associated with MIS student achievement.

Effect of the Learning Team at the School Level

All Lead teachers indicate that they are more prepared to address MIS Teacher issues as a result of PD involving LT concepts and application. Ninety-three (93) percent of Lead Teachers indicated that MIS teachers have education and communication skills, as a result of learning teams. (LT18.14, 18.15). Sixty-one (61) percent of principals and 64% of teachers indicate that the lead teacher is helping develop Learning Team teachers professionally. Fifty-three (53) percent of teachers indicate the lead teacher helps them in planning and in sharing information from seminars; 40%

of learning team teachers indicate that that without lead teacher support they would face many problems in MIS classes.

Lead teachers highlighted the ability of learning teams to support learning of new pedagogies (79%) and boost teamwork (86%) and communication (79%), however only 57% indicated that learning teams were the best way to clarify specific subject concepts.

Principal Feedback

Eighty-five (85) percent of principals in COP schools say the learning team is operating well. Forty-six percent of Principals indicate that the learning team reduces the management problems they face; and 93% of lead teachers indicate that learning teams in CoP schools work together to solve common problems (as opposed to going to the principal). Seventy-seven (77) percent of principals in COP schools consider the learning team as a good method to support teamwork among Learning Team teachers compared to 67% in Good Schools and 50% in Weak schools. (P 10.6)

Learning Team concepts in COP Schools compared to Good and Weak Schools

Figure 3.3 and Figure 3.4 indicate that teachers in Good and Weak schools are familiar with the concepts of co-equal training and lead teacher support to other teachers that are practiced in COP schools. It is uncertain the extent to which these concepts are practiced in good and weak schools, the capacity of lead teachers to offer support to learning team teachers, and the role lead teachers see themselves as playing in these schools.

Figure 3.3 - Coequal training culture in all schools-

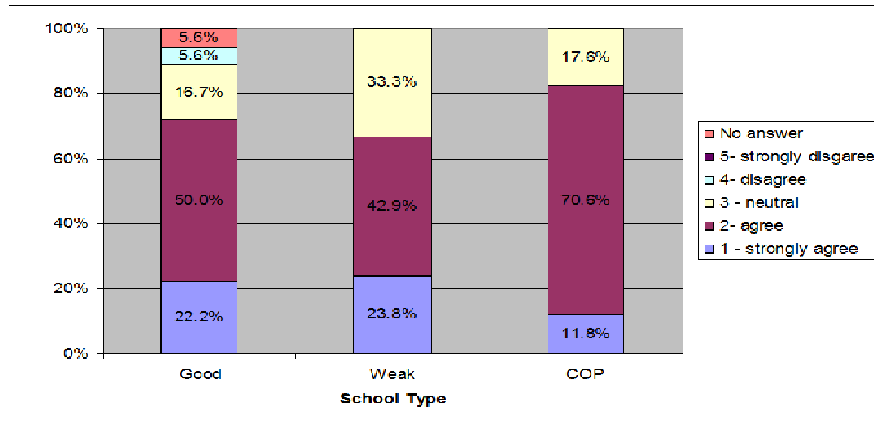


Figure 3.3 There is a coequal training culture in my school where we help one and other.”

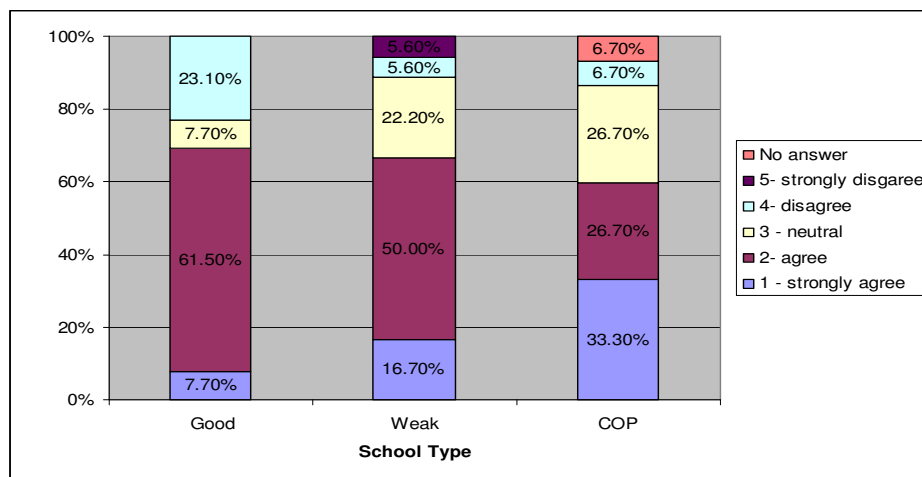


Figure 3.4 – Lead Teacher support in all schools – Teacher responses “There lead teacher supports me and helps me understand MIS concepts.”

Teacher responses

The Lead Teacher

Eighty-six (86) percent of principals say they decreased the burden of the lead teacher to help support learning groups. However, while 60% of learning team teachers agree that the lead teacher is helpful, only 33% indicate understanding why the teaching burden of the lead teacher has been decreased. Forty-seven percent indicated a neutral response. Teacher feedback on lead teacher support showed little variance between Good, Weak and COP schools.

Lead teachers indicate they use additional time to (i) Develop strategies for increasing student performance

(86%); (ii) Planning for the professional development of Learning Team teachers (71%); and (iii) Analyze data on student performance (71%). (LT-14) Lead teachers indicate the following challenges in order of priority: (i) Resources and materials are not available; (ii) Class schedule over loaded; (iii) Not enough time for Weekly meetings, and (iv) Not all MIS teachers are trained on COP. (LT-22)

Lead teacher and principal responses on how the principals supported learning teams suggested different viewpoints between the two parties as indicated by Table (4)

Lead Teachers also indicate that MIS supervisors could support learning team activities by: (i) Offering more management support from the directorate (86%); (ii) Support cooperation and sharing of experiences between schools (71%); Attending Learning Team

Table 4. Principal support of learning teams

	Lead Teachers suggested principals could support learning teams by:	Principal indicating they offered the following support (P-13A)
Offering a PD room	86%	85%
Giving more materials / equipment	57%	85%
Offering a more flexible work schedule	57%	85%
Sharing in teacher assessment	43%	50%

Meetings (57%) and Providing Resources (50%).

and having experienced teachers observe new teachers.

Additional Findings

Positive Impact of learning team on the school level

Surveys and Focus Group discussions indicate that learning teams and lead teachers exist at many schools, including two non-CoP schools in this evaluation. These two schools established learning teams with goals similar to the learning teams established in CoP schools. Principals (54%) and Lead teachers (42%) in CoP schools note that MIS Learning Team activities have played a role in helping other teachers adopting learning team ideas and concepts and initiate learning teams at the CoP school. Eighty-nine (89) percent of principals in Good schools indicated that other teachers adopted the team work idea in because of the teamwork of MIS teachers; while only 30% of principals in Weak schools indicated the same. FGs not able to explain difference in findings between good and weak schools.

While other schools encountered also have lead teachers, in many of these cases the lead teacher spends the majority of his /her time on administrative tasks or other work for the school principal. In an Amman FG 3 of 6 champion teachers indicated their tasks focus on administrative work for the principal. Even so, in Good (78%), Weak (80%) and CoP (63%) schools, teachers indicated that they share professional development techniques learned in seminars with other teachers – suggesting LT concept can work in other schools.

Strategies for working with New MIS Teachers

Focus group participants in CoP and Good schools noted that MIS teachers had a strategy for introducing new MIS teachers to the school. Strategies include peer-coaching in specific subjects and pedagogies; allowing new teachers to observe experienced teachers

Institutional Environment

Main Evaluation Results – Section 4

A large majority of Principals (69%), Lead Teachers (93%), and Teachers (75%) strongly agree or agree that the MIS supervisor offers support to Lead Teachers in CoP schools. All MIS Supervisors indicated that professional development seminars improved their ability to support MIS teachers they supervise; 89% indicated that they help MIS teachers in new teaching techniques.

Principal technical and administrative support of MIS Teachers varies across schools studied – with teachers in the majority of FGs leveling concerns about principal support. Even so, half of the principals in CoP schools *strongly agreed* that MIS Supervisors could help learning team teachers in applying new techniques in school compared to 11% in Good and Weak Schools.

Only 50% of Head supervisors surveyed were aware of MIS professional development seminars. However, seventy-five percent indicated an interest in playing a larger role in MIS teacher seminars and the majority said they would support learning teams with resources or through seminars.

Principal and MIS Supervisor Support

The extent to which the principals' role is to offer technical and/or institutional support to MIS Teachers and Lead Teachers is uncertain. Surveys and FG data suggest that MIS Teachers and Lead Teacher look to principals for both types of support – but are often reliant on the principal to address administrative issues on the school level. Teachers regularly pointed to the significant influence of school and district level leadership on their work and suggested a desire for greater communication and collaboration. In seven of

eight focus groups teachers registered concerns or complaints about principal or MIS supervisor support.

Teacher and Lead Teacher data suggest that teachers look to MIS Supervisors and principals for pedagogical / technical support. In Good and Weak schools 78% and 60% of teachers indicated that both principals and MIS supervisors helped them apply new techniques for teaching MIS. In COP schools, 75% of teachers indicated receiving technical support from MIS supervisors; while only 31% indicated receiving technical support from principals. Fifty-three percent of respondents were neutral. In the case of COP schools, it is uncertain whether teachers looked to lead teachers in place of principals – or whether they did not see the principal in the role of providing technical support.

Even so, half of the principals in CoP schools *strongly agreed* that MIS Supervisors could help learning team teachers in applying new techniques in school compared to 11% in Good and Weak Schools. Teachers in a COP school FG indicated that after development of the learning team *“the principal become a more cooperative person, more [of a] facilitator.*

Teachers indicated a desire for principals and supervisors to have more knowledge of the seminars and access to seminar materials so they could better understand teachers’ technical work. On the school level – teachers in more than half of the focus groups indicated that their heavy class-load limited their ability to collaborate with other teachers. In two focus groups, teachers indicated the principal allowed the MIS class very limited access to MIS labs.

MIS Supervisors

All MIS Supervisors indicated that professional development seminars improved their ability to support MIS teachers they supervise, 89% indicated that they help MIS teachers in new teaching techniques. All MIS supervisors indicated a desire to increase subject-specific and pedagogical seminars for teachers; several indicated that decentralizing professional development through formal learning groups was a strength of the new approach and that they could support learning teams without ESP support.

A large majority of Principals, Lead Teachers, and Teachers (69%, 93%, and 75%) strongly agree or agree that the MIS supervisor offer support to Lead Teachers in COP schools. Half of the principals in CoP schools ‘strongly agreed’ that MIS Supervisors could help learning team teachers in applying new techniques in school compared to 11% in Good and Weak Schools. According to principals – MIS Supervisor support is strongest in COP schools – where 69% of principals indicate that MIS Supervisors help the leaning team apply new MIS techniques in their school compared to

56% and 50% in good and weak schools. There was some variance between teacher responses in Good (78%), Weak (60%) and COP (75%) schools indicating that MIS supervisors helped them apply new techniques to teach MIS topics.

Eighty-nine (89) of MIS Supervisors indicated they need more professional development on MIS curriculum. Teachers indicated a desire for more information on seminars and available resources, but noted that in some cases supervisors did not get seminar schedules or materials to them. In one FG, teachers indicated they were forced to attend a seminar they did not need.

Head Supervisor Support

Only half of the Head supervisors surveyed were aware of ESP seminars. However, seventy-five percent indicated an interest in playing a larger role in MIS teacher professional development and the majority said they would support learning teams with resources or through seminars.

Lead teacher suggest supervisors could support learning teams by:

- Offering more management support from the directorate (86%);
- Support cooperation and sharing of experiences between schools (71%);
- Attending Learning Team Meetings (57%); and
- Providing resources (50%).

DISCUSSION

Professional Development

Teachers continue to see both subject-specific and pedagogical seminars as important in their professional development. As teachers develop subject expertise, the MoE may see an increase in demand for pedagogical seminars. However, given the technology-driven nature of MIS subjects – it seems likely that subject-specific seminars will continue to be desired. Teacher feedback suggests an interest in a professional development approach offering a menu of seminar options supporting the different needs and skills gaps of teachers coupled with structures, resources and technology at the *school level* supporting self-study and learning teams. Teachers in several focus groups indicated an interest for further University-level work. Teachers do not necessarily perceive seminars as aligned with, or a part of their career path. A reason for this could include seminar hours not counting in the MoE ranking system.

Skill development / Implementation

Classroom observation in February/March will allow the evaluation team to further quantify the extent to which subject-specific, technology application, and pedagogical skill-sets are demonstrated by teachers in the classroom and the extent to which teachers are limited by different school technology profiles. However, baseline student responses suggest that access to resources may limit the extent to which teachers are able to demonstrate new skills. These results will be presented in the Final Report in June 2008.

Learning Teams

As learning teams are in their initial stages of implementation in CoP schools – it will be important to follow teacher perceptions on learning team implementation over the school year. Of particular interest may be perceptions of the influence learning team concepts and activities in improving teaching and student learning, and clarification of the role of the lead teacher. The possibilities and limitations of learning teams to support the different facets of teacher professional development at the school-level in Jordan are as yet unknown. Further exploration of how learning teams may compliment, or possibly conflict, with different professional development approaches could offer useful insights as the MoE continues to consider policies supporting the professional development its teachers. Interim findings brought up two other questions. (i) How transferable are learning team concepts / implementation to other schools? (ii) Integration of New MIS teachers: What do good schools do? What leadership is needed?

Institutional Environment

Engagement of principals and supervisors in a dialogue around teacher workplace and professional development activities could improve what seems to be the uneven principal and supervisors support of MIS teachers. Training seminars may not be the ideal forum through which to address teacher concerns about issues in school management and support of teacher professional development. However, an inclusive professional development environment could help these groups work together better, identify common goals,

and support the more creative use of existing resources. The extent to which the supervisor's role has, or will change in light of the new professional development approach remains an open question. The sustainability of the MoE LSD team was not explored in this evaluation – but may be important to note when considering the future of professional development for MIS teachers.

Recommendations

The researchers recommend to the Ministry of Education to apply professional development for other streams, activate the accountability system, follow up teacher implementation of the professional development and to conduct the following studies :

- Evaluate professional development in other streams.
- Under what conditions are teacher most able to apply new skills in the classroom?
- The relationship between professional development and teachers teaching load.

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