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NETWORK A MEETING RECORD

Network A Plenary Meeting
April 22-24, 1998, San Francisco, California

Participants

Friedrich Plank, Austria
Aletta Grisay, Belgium (French)
Dominique Duchateau, Belgium (French)
Luc Van de Poele, Belgium (Flemish)
C. Jean Britton, Canada
Jana Straková, Czech Republic
Niels Plischewski, Denmark
Kimmo Leimu, Finland
Jacqueline Levasseur, France
Jochen Schweitzer, Germany
Stella Vosniadou, Greece
Judit Kádár-Fülöp, Hungary
Chiara Croce, Italy
Jean-Paul Reeff, Luxembourg
Fernando Cordova Calderon, Mexico
Arnold Spee, the Netherlands
Jules Peschar, the Netherlands
Lynne Whitney, New Zealand
Marit Granheim, Norway
Gertrudes Amaro, Portugal
Guillermo Gil, Spain
Birgitta Fredander, Sweden
Uri Peter Trier, Switzerland
Brian Semple, United Kingdom
Eugene Owen, United States
Jay Moskowitz, United States
Maria Stephens, United States
Jane Schubert, United States
Andreas Schleicher, OECD

Observers

Wendy Whitham, Australia
Dianne Pennock, Canada
Ritva Jakku-Sihvonen, Finland
Péter Vári, Hungary
Helga Hinke, Germany
Ryo Watanabe, Japan
Heinz Gilomen, Switzerland
Harry O'Neil, CRESST/USC
Eckhard Klieme, Max Planck Institute
Joachim Funke, University of Heidelberg

Welcome

Eugene Owen opened the meeting by welcoming the Network to San Francisco. He welcomed new representatives Dominique Duchateau (Belgium-French) and Lynne Whitney (New Zealand), as well as several observers from the Board of Participating Countries. Members approved the agenda with the addition of discussion of the CCC problem-solving proposal on the 22nd. Minutes from the plenary session in Salzburg and two CCC meetings in Ghent and Baltimore were approved with no changes.

OECD Update

Andreas Schleicher provided members with an update on activities in the INES Project and in the OECD.

INES Project

In reporting on the last meeting of the Education Committee (EC), Andreas noted their strong and continuing commitment to the INES project and the publication of *Education at a Glance* (considered a “bestseller” among OECD products). He also reported that the Education Committee is urging the Networks to establish regular and transparent financing structures and suggested that the Network take up this topic at the meeting, with the goal of submitting a written proposal to the EC by July. He also provided brief updates of Networks B and C and the Technical Group. Highlights include publication of a report on Human Capital Investment and the completion of the revision of ISCED levels.

World Indicators Project

Thirteen countries—Argentina, Brazil, Chile, China, Jordan, Indonesia, India, Thailand, Paraguay, Uruguay, Malaysia, Philippines, and the Russian Federation—are participating in the world indicators project, aimed at promoting countries’ development and use education policy indicators. Many of the countries have delivered data at an acceptable level of quality and validity such that the INES Steering Group accepted a proposal to incorporate world indicators countries data into this year’s *EAG*. Andreas noted that the success of the project is in part due to the technical assistance provided to the participating countries by OECD members, such as Australia, Canada, Germany, Netherlands, and the United States. Further, the participating countries have expressed an interest in going beyond the initial scope of the project from the development of indicators to thematic and analytic discussions (e.g., as in *Education Policy Analysis*). The project, which will continue to develop and evolve, has been characterized by strong interest on the part of the participating countries.

Eugene then opened the floor to questions. Andreas made the following comments in response to questions on:

- The recent INES Steering Group meeting—The INES Steering Group endorsed new conceptual work such as DeSeCo, International Life Skills, and problem-solving and promised full commitment to these projects. However, they too asked for financial mechanisms to be specified and put in place. Equity was named a focus of future research and analytic efforts.
- The financing of the world indicators project—The project is financed mainly through a grant from the World Bank made available through UNESCO. Although, recently, in-kind and other financial contributions of OECD countries have provided substantial support for the project.
- Conceptual differences in needs of OECD countries and other countries for types of policy indicators—The purpose of any project is not to develop indicators to meet specific needs of

countries, rather to provide guidance and assistance in promotion of OECD work which may coincide with interests of countries.

Update on the Data Strategy

Eugene then provided a very brief update on the Data Strategy, as nearly all members had attended at least one day of the Board of Participating Countries meeting earlier in the week. There were no questions.

Strategic Plan for Network A

Eugene then introduced a revised draft of the Strategic Plan for Network A, outlining future directions and responsibilities.

Overall, Network members seemed pleased with the document and found it useful in thinking about the future of the Network. In particular, members mentioned that such documents were very useful with policy makers in justifying the various activities being undertaken.

However, some Network members thought that there should be even further clarification on the roles of the Network and the BPC. Some also felt thought that the document should remain more open to additional products and development work. In particular, the document could recognize development in other academic and non-academic domains beyond reading, mathematics, science, and CCCs. Many members thought the document should address the use and role of information technologies in each of the various areas of responsibility and as a topic for development. In sum, it was noted that such a document should not only focus on the five years on which it is based, but should also contribute to building a long-term strategy and describe how the plan will foster that strategy.

The Network secretariat will make final revisions to this document and make it available to Network members.

CCC Problem-Solving Proposal

The next agenda item was discussion of the CCC proposal for problem-solving, prepared following a meeting of a planning group in Baltimore in February. Eugene described the process by which the proposal was developed and explained the major activities of the proposal, and then opened the floor to discussion.

Several members commented that they liked the approach and the increased use of outside expertise. Andreas remarked that the proposal had met with the strong support of the INES Steering Group at their last meeting earlier in the month. A few members had concerns over the cost of the project, but most thought that it was well worth the expense to have the conceptual work done at the outset of the project. Eugene remarked that the proposal would allow the Network to “cast the broadest possible net” in terms of settling ourselves with a definition and

location within the field of problem-solving before moving to the selection or development of instruments and consideration of measurement issues for large-scale assessment.

Much of the conversation, however, was focused around financing strategies for both this project and Network A activities more generally, as desired by the EC and the INES Steering Group. For instance, one suggestion was that overhead costs be funded 50 percent by a lead country or group of countries, and the remainder shared evenly by participating countries. However, Guillermo Gil pointed out that the two issues—establishing a principle for funding and finding funding for problem-solving—should be considered separate discussions.

With regard to the problem-solving proposal, the Network was generally supportive of the project, and it was decided that the OECD would send letters to the Education Committee to seek financial support of members. Several countries already expressed an interest in contributing to the project.

With regard to establishing a principle for financing development work, the Network was uncertain. Eugene was wary of establishing a single mechanism by which to fund development activities, because it was too restrictive. Most members thought that the Network should begin with a plan to fund the problem-solving work, and work to find ways to finance other upcoming activities.

With respect to both matters, the Network adopted the following principles:

- Participation in financing the project is not a requirement for participation in Network A development activities.
- The Network will look for ways to cover costs (after contributions from Netherlands, Norway, and the United States) of the problem-solving development work on an ad-hoc basis until countries can build this work into their budgets. For instance, countries may agree to make back-payments for year 1 contributions. If all countries agree to participate, contributions will be between US\$10,000 and US\$20,000.
- Andreas will draft letters to countries' Education Committee members to secure financial support for the project.
- Jean-Paul Reeff will take responsibility for communicating with members about ways to finance various upcoming development activities of the Network.

CCC Self-Concept Update and Discussion

A group of countries, including the Network chair, OECD secretariat, and countries interested in financing the Self-Concept work, had met the previous evening to discuss immediate next steps. Eugene reported that the following decisions had been taken:

- A team of experts will be named by mid-May who will be contracted to complete the development of items for scales for self-concept and self-management of learning, as consistent with the conceptual paper prepared by Helmut Fend.

- The final development will occur 3-6 June in Amsterdam, where the experts will meet with Jules Peschar and a managerial group (consisting of the financing countries and OECD Secretariat) for two days and then draft the report and scales by 7 June.
- Belgium (Flemish), Germany Netherlands, and Norway will finance the work, and will participate in the June meeting to review and approve the development work. The Network Secretariat will provide technical and other support, as well.
- There will be a meeting 11-12 September in Oslo for all Network members who are interested in participating in the self-concept work and field tests, at which time, they will have an opportunity to review the instruments.
- The instruments will then be distributed to the entire Network for review, at least 6 weeks prior to the Fall plenary session. After the Network A meeting in October, there will be no further opportunities for revision.
- At this point, the scales will be turned over to ACER for the 1999 field test. Jules will have responsibility for analysis of the results, the Network will have the opportunity to review the results, and then the instrument will go back to ACER for inclusion in the data collection with the main assessment.

Jules noted that the major distinction between this plan from the one outlined in the minutes from the Ghent meeting is that this new plan allows for: greater involvement of experts, more time for development work, and more time for review by participating countries and the entire Network. Uri Trier commented that the Network Chair and OECD must stay actively involved in this process, as it was very dependent upon a strict timeline and strict quality control. He also warned of the practical difficulty of obtaining the assistance of experts (e.g., Helmut Fend). He also asked about the division of responsibility among the Network, the secretariat of the Network, the OECD Secretariat, and the managerial group of paying countries. Eugene noted that the Network A secretariat would bear responsibility for the distribution of the final scales. Marit Granheim added that the exclusion of the Network or broader group of CCC interested countries from the June meeting was for practical purposes only, and urged communication among all interested countries through this final phase of work.

Andreas noted that the proposal on the table was an attempt to minimize the risk and effectively operationalize the work that had been done thus far. He reminded the Network that four countries were willing to take that risk, and urged the Network to take seriously the multiple decision points along the next few months that would be crucial to the outcome of this work. The identification of experts being the first, and the approval of their work in June as the second.

Many Network members voiced support for the plan, and it was agreed to proceed. In response to a question, it was noted that countries may independently participate in the Self-Concept regardless of participation in PISA.

EAG 2000

Eugene then introduced a proposal to develop a volume of essays on the development and preparation of learning outcomes indicators—the so-called EAG2000—for the General

Assembly meeting in 2000. Such a volume would be a Network product published by OECD. He described the proposal's organization of the volume into four parts: policy, context, outcomes, and methodology—noting that the chapter on outcomes might use the APOI analysis plan as a model. He suggested that countries volunteer to prepare individual chapters and the Network secretariat would take responsibility for editing the volume.

Network members, on the whole, were supportive of the proposal and offered the following suggestions:

- The volume should focus as much on the future as on the past, with a future directions/implications section either at the end of each chapter or as an additional chapter at the end of the volume. Eugene agreed with this suggestion, and mentioned that it was the intention that the volume be prospective as well as reflective.
- The volume should reflect, as well, on the changes over time and perhaps on the impact the use of policy indicators has had in our countries.
- The volume should address the use of indicators for policy makers and their importance to accountability in many countries.
- We should look for creative ways to report on topics, offering the idea of “mini case studies,” in which one country would take responsibility for synthesizing the similarities and differences.
- The volume should include information on trends.

Eugene thanked the Network for their suggestions, and requested that countries that are interested in preparing chapters—or that have suggestions for additional or different chapters—contact him (*by June 15*). The general timeline will be for countries to: prepare preliminary outlines for chapters for review at the October meeting; prepare highly detailed outlines by the Spring 1999 meeting; and prepare first drafts by Fall 1999.

APOI Analysis Plan

The Network approved the revised version of the APOI analysis plan. The Network secretariat will send it electronically to the OECD secretariat for transmittal to ACER.

EAG 98 Indicators

The draft chapter on student achievement met with much concern from many Network members. Concerns centered mainly on the inclusion of TIMSS population 3 results. Many countries felt that the data—due to low and widely differing response rates and debate over the accuracy of context data on years of schooling, etc.—were invalid for comparisons, even of the scaled down nature in which they were presented in the draft *EAG* chapter.

Although these concerns were not universal, the Network agreed to limit this year's indicators to those that focused on other populations of TIMSS or on adult literacy. It was agreed that the

Network secretariat would transmit the remaining indicators (F6, F7, and F8) to the OECD secretariat for revision and redistribution.

However, Eugene pointed out that the difficulty of comparability and the difficulty of obtaining good response rates on this type of assessment will not go away; and this discussion may serve as a reminder for the implementation of PISA. Luc Van de Poele shared the concern, remarking that ensuring adequate response rates should be a special priority in the national implementations of PISA.

CCC Expert Day: Presentations on Problem Solving

Eugene welcomed Harry O’Neil, from CRESST; Eckhard Klieme, from Max Planck Institute on Human Development; and Joachim Funke, from University of Heidelberg, to San Francisco and thanked them for agreeing to share their experiences and expertise in developing measures of problem-solving with the Network. He also expressed the regrets of Ann Borthwick, who was to facilitate the discussion, whose flight was cancelled due to bad weather. He reiterated that the purpose of the experts day was to give the Network a sense of the substantive issues in the field as we undertake development work in problem-solving.

Harry O’Neil

Dr. O’Neil provided a valuable introduction to some of the issues in assessing problem-solving, based upon his experiences at CRESST (Center for Research in Evaluation, Standards, and Student Testing) and with the International Life Skills Project. He provided an overview of the available problem-solving frameworks and definitions (citing researchers such as Broadbent, Dörner, Glaser, Schoenfeld, Lesgold and Lajoie, Sugrue, and Dossey, Mullis and Jones), identifying four common components of the definitions: content knowledge, problem-solving strategies, metacognition, and effort/self-efficacy. CRESST adopted Mayer and Wittrock’s definition of problem-solving—a cognitive process directed at achieving a goal when no solution method is obvious to the problem-solver—and consider problem-solving as one of five families of cognitive learning.

In the CRESST model, problem-solving has three components: content understanding, domain specific strategies, and self-regulation (metacognition and motivation). The content understanding component of problem-solving is assessed through the use of knowledge maps, requiring students to graphically represent relationships among ideas. Surveys assess the other two components to provide a composite score for problem-solving. Dr. O’Neil cited the strengths of the model as being focused on the types of skills for education and work, drawing upon a variety of perspectives (cognitive science, social/developmental, and workforce readiness literature), and breaking new ground. On the other hand, the newness and nature of the assessment (performance-based) leads to questions about its reliability and content validity, as well as to challenges in reporting, that remain to be addressed as further development occur.

Eckhard Klieme

Dr. Klieme's presentation addressed problem-solving as a cross-curricular competency. As an introduction, he presented a grid that was very useful in thinking about the various "locations" of problem-solving. His grid consisted of (generally) four "locations"—curricular and extra-curricular areas along the horizontal axis and educational and non-educational setting along the vertical axis. Much of his presentation focused on problem-solving in extra-curricular and non-educational settings. Tests that attempt to measure extra-curricular, non-educational problem-solving generally are: integrative, multiple step, and authentic; simulated by a sequence of test items; and arranged into steps according to a general process model for problem-solving and control of action. Questions require students to define, analyze, plan, execute, and evaluate. Dr. Klieme offered an interesting example from one of the German Länder, in which students were asked to lay out a garden given a variety of constraints. The finding from these and other pencil-and-paper assessments is that problem-solving ability, here, correlates to general cognitive ability much the same way other subjects do. One of the weaknesses of this type of problem-solving assessment is the loose frame, in which there is no formal description of the process and little ability to vary difficulty. Also, the closed item format is limiting in that there is no dynamism, search for information, or process indicators. Some of these weaknesses are addressed by further research in complex problem solving.

Joachim Funke

Dr. Funke's presentation focused on developments in European problem-solving research with an emphasis on complex problem solving. Dr. Funke described that research in complex problem solving (CPS) began as a reaction to the poor predictive power of IQ tests to measure problem-solving skills in everyday situations. Assessments of CPS generally focuses on the construction of computer-simulated scenarios for use as a tool to analyze problem-solving steps of naïve subjects in controlled conditions. Two famous examples are Lohhausen (a fictitious town that subjects were charged to "be a good mayor" for) and Tailorshop (a fictitious factory that subjects were charged to "be a good manager" for). Lessons learned from these experiments were that: IQ was predictive only in transparent situations, the complexity of the tasks led to catastrophes, and there was a strong interplay between cognitive and emotional processes.

The model of CPS that Dr. Funke and his colleagues have adopted has many similarities to the CRESST model, including components such as memory contents, information processing, and non-cognitive variables. The CPS model also adds components related to the task (as opposed to the problem-solver), which are given information and goals and non-cognitive variables. Challenges have arisen when applying the model, including difficulty with: complexity of scenarios to the researchers as well as the subjects, reliability and validity, and focus on action and decision making. Dr. Funke provided another example of a tool for problem-solving assessment: finite state automata (FSA). FSA describes complex systems representing a series of discrete steps (e.g., ATM machines, VCRs). Dr. Funke suggested that the use of FSA as tools for assessing problem-solving may be beneficial for their ability to assess optimal performance, their universality, and their ecological validity. Dr. Funke concluded in stating because of attention to cognitive and emotional competences, computer presentation, and easy variability in difficulty, CPS research may be a valuable area for the Network to explore in its charge.

Many members were pleased to have the opportunity to learn more about substantive issues. Most agreed that such presentations should become a regular part of Network meetings.

Summary

Eugene adjourned the meeting by thanking the presenters for the CCC experts day and the Network members for their continuing hard work. He invited members to send comments about the timing and location of the next meeting, which will be determined shortly.