PIAAC RISK ASSESSMENT

3rd meeting of PIAAC BPC
6-7 November 2008
Paris

Contact: Andreas Schleicher Email: Andreas.Schleicher@OECD.org; Tel: + 33 (1) 45 24 93 66
Contact: William Thorn Email: William.Thorn@OECD.org; Tel: + 33 (1) 45 24 78 04
PIAAC RISK ASSESSMENT

Introduction

1. PIAAC is a large and complex project with a range of novel features compared to previous international adult skills surveys, both in terms of design and project steering and management. The project’s timetable is ambitious and the expectations of participating countries are high in terms of the quality and policy relevance of its results. In this context and in line with principles of good project management, this paper looks ahead to identify the possible risks to the successful completion of the project and what could be done about them.

2. This document provides an assessment of the main areas of risk to the successful completion of the PIAAC project assuming the existing project timetable and project specifications. The objective of the exercise is ‘preventative’. Firstly, it identifies what could potentially go wrong in the implementation of PIAAC. Secondly, it proposes some responses to these risks, either in the form of actions to reduce the probability of their occurrence or to mitigate their effects if they were to occur.

3. Six areas of potential risk are discussed below: the tight timetable, the computer delivery platform, the reliability and validity of questionnaires and instruments, survey operations at the national level, processes and procedures and comparability across delivery modes and over time. These were identified as the areas of greatest potential risk in consultation with the PIAAC international consortium. From this point of view, they should not be seen as a comprehensive list of risks, but rather as a subset of risks, targeted due to their potential impact.

Timetable

4. Given the current specifications, the timetable established for PIAAC leaves little if any room for slippage or delays by either countries or the consortium. The fact that the timeline is tight means that there is considerable potential risk in a large and complex project such as PIAAC. In the absence of ‘slack’ in the project schedule, failure to meet a key intermediate deadline or the accumulation of minor delays could threaten the project by imposing compromises that affect data quality (e.g., reduce the time available for testing the usability of the delivery platform or enter the main study with inadequate preparation) or lead to failure in one or more countries to meet a major deadline such as the field test or main study.

5. There are a number of ways in which this risk can be managed. Firstly, in terms of project management, there must be:

- awareness by all the parties of the project deadlines and a commitment to the strict adherence to project deadlines;
- the establishment of a strong project management infrastructure (e.g. appointment of NPMs, establishment of national centres) in participating countries;
- clear rules applying in the cases of failure to meet deadlines;
- a monitoring system which provides early warning’ of potential problems; and
6. A detailed timeline presenting the key deadlines and the time available to undertake the tasks necessary at each stage of the project is provided in the BPC document COM/DELSA/EDU/PIAAC(2008)21. In terms of rules, the BPC must agree that there are ‘drop dead’ dates for the completion of key stages in the project – i.e. that there are hard deadlines and that failure to meet them may mean that a country has to withdraw from the project or accept a high level of risk for the quality of data.

7. Another option would be for participating countries to agree to extend the project’s duration. This would have costs in terms of delays to reporting as well as financial costs. An extension of the project by 12 months, for example, would add between EUR 3-4 million to the project cost.

**Computer Delivery Platform**

8. PIAAC represents an innovation in large scale assessment methodology in that the assessment is computer-based. The assessment will be delivered on a laptop computer to respondents in their homes. In addition, the assessment component will be integrated with a CAPI tool to be used for the administration of the background questionnaire and the JRA. In its turn, the integrated PIAAC system will need to have an interface with the survey management systems of the organisations administering the survey in countries.

9. A prototype of the virtual machine environment must be available for countries to review by October 2008 and all functionality programmed by the end of December 2008. The PIAAC Integrated Delivery Platform must be available by June 2009 to allow countries and the consortium opportunities to test and refine the system that will be used to train countries in December 2009 for the field test.

10. The risks associated with this component of the project reflect the fact that it is a new system which will have to be developed and tested in a tight timeframe. In particular, thorough and comprehensive system and usability testing will need to be undertaken in countries prior to both the field trial and main study (as countries will need to test and implement changes to instrumentation following the field trial). Failure to adequately test the platform at either stage could create major problems in the field test or main study. This could occur either as a result of delays in systems development reducing the window of time available for testing or through participating countries not devoting sufficient resources to this phase of testing.

11. This risk can be reduced by effective project planning and management. The development phase can be broken into modules and monitored to ensure that each part is being developed as planned. Countries must accept that the available window for systems testing and integration is fixed and ensure that the available time is used effectively. In the event that major problems emerge in the development of the CAPI platform to be used for the background questionnaire, it could be possible to use another commercially available platform. The PIAAC contractor has developed a contingency plan for the use of a CAPI platform based on an existing system (Blaise) which assumes the existing timeframe. If this was necessary, a decision would need to be taken by early 2009 to change platform and there would be additional costs (approximately EUR 1-2 million) to countries to cover the development of the alternative CAPI platform and its integration with the TAO platform to be used for the direct assessment. To cover the worst-case scenario, a contingency plan for the use of pencil and paper based assessment for all respondents (which would necessitate dropping the problem solving component of the assessment) should be developed.

12. Alternatively, it would be possible for countries to agree to extend the project timeline. As mentioned above, this would entail additional costs for participating countries.
Direct assessment instruments and questionnaires

13. There is a risk that the assessment instruments and questionnaires developed for PIAAC fail to provide valid and reliable measures of the skill domains and constructs they are intended to measure. The risk of such problems is judged to be lowest in the case of literacy and numeracy instruments and the background questionnaire. In terms of the literacy and numeracy assessments, the majority of items will be drawn from IALS and ALLE and the development of new items is based on known frameworks. Similarly, the background questionnaire is being developed largely on the basis of existing instruments. However, the development of the background questionnaire presents challenges in terms of ensuring that the policy interests of participating countries are met.

14. Risks are higher in the case of the assessment of problem solving in technology rich environments (TRE) and the JRA. Problem solving in TRE represents a new construct for which in which both the assessment framework and the set of assessment tasks needs to be developed. Contributing to this challenge is the fact that there is less experience in the scaling of these types of items (which tend to be scenario based) using current IRT methodologies. The JRA represents an untested approach in an international context and there is less experience or information to support the validation of this component.

15. In order to minimise risks, it is proposed that PIAAC relies as much as possible on existing experience with items types related to problem solving in technology rich environments and to maximise the information gained from the pilot study for JRA. In terms of the BQ, opportunities for country comment on iterations of the BQ will be maximised during the development phase.

Survey Operations and Quality Control at National Level

16. There is a potential risk that some participating countries will fail to undertake the tasks for which they are responsible in the implementation of PIAAC with the consequence that they fail to meet either the standards required or the required deadlines. The overall impact of such failure is cumulative and ultimately could be extremely serious for a country in that its results are excluded from the international report and prove to be of little utility at the national level. Moreover, if several countries experience such difficulties these errors could have a significant impact on the overall integrity and utility of the PIAAC survey.

17. At the national level, successful implementation of PIAAC will require countries to have a strong project management infrastructure (NPM and national centre) and the resources and capacity to undertake or contract out the activities associated with national implementation of PIAAC such as sampling, training, translation of survey instruments, survey administration, scoring, and data processing. Each of these separate activities contributes to ensuring the quality of PIAAC data and failure to perform any one of them to the standards required by the project contributes some degree of error to the data. Other factors that could contribute to errors experienced by one or more countries include the inability to hire qualified staff, inadequate staff training, and failure to adhere to existing and agreed upon timelines.

18. Possible actions to minimise risks of operational problems include:

- Providing countries with documentation about key aspects of the project such as a paper on the roles and responsibilities of NPMs and qualifications needed from a survey organization. Other documents include guidelines for translation and adaptation, the overall assessment design, and implementation aspects at national centres. Participating countries will also receive standards that must be met for each facet of the project.
The delivery of training manuals and hands on training covering all aspects of survey operations.

National implementation of quality control procedures.

Regular communications with the consortium through attendance at meetings and uploading of documents and information on the PIAAC SharePoint site.

Production and monitoring of a checklist of things that must be done by each country and the date by which it must be completed.

Processes and procedures

19. Three main risks in the area of processes and procedures have been identified.

20. The first – an insufficient opportunity for countries to be actively engaged in PIAAC – is related to the tightness of the timeline. The current timetable for PIAAC provides very narrow windows of opportunity for countries to provide input in key areas of PIAAC such as the development of the frameworks and survey instruments as well as survey standards. A potential consequence is that countries do not feel that they have sufficient say in the instrument development process and that the outcomes do not reflect their needs. In addition, countries may not feel that they ‘own’ decisions relating to important aspects of the survey due to limited opportunities for consultation. The consequence is a potential loss of legitimacy of the assessment and its findings.

21. A second aspect relates to ongoing changes to work requirements and addition of new tasks for the consortium. While there will always be some need in a project like PIAAC to revisit project tasks and to consider options for doing things differently, ongoing changes to tasks and requests for information (beyond that required for project management and accountability) from the consortium will divert resources from the core work program with potentially negative impacts on quality, particularly in the context of the tight timetable for PIAAC.

22. A final risk includes the need to develop a high level of trust between the contractor, secretariat and participating countries. This is an essential element to the effective implementation of PIAAC. Lack of confidence among any of the parties in the other will have a negative impact on the project.

23. The occurrence of these types of situation or event has the potential to affect the quality and the legitimacy of the assessment but not to the extent that would put the continuation of the project in question. Possible actions to minimise these risks include:

- Ensuring participating countries are aware of opportunities for input and understand and accept constraints created by the existing timetable;
- Increasing the duration of the project duration (see discussion of timeframes);
- Ensuring efficient decision making processes at the level of the Secretariat and BPC/Bureau;
- Recognising the ‘costs’ associated with information requests, changes to the specification of tasks, and establishing clear protocols for communication;
- Ensuring transparency in decision making and accountability for actions; and
- Maintaining good communication channels between participating countries, the OECD secretariat and the project consortium.
Comparability between assessment modes and over time

24. The design of PIAAC assumes that there will be comparability between PIAAC and previous adult skills surveys (IALS and ALL) as well as between the computer based and pencil and paper administration of the PIAAC assessment. There is a risk that this assumption proves incorrect.

25. Action to reduce the likelihood that comparability will not be established on one or both of these dimensions includes maximising reliance on existing knowledge about layout and response types that could impact the difficulty of items within each mode of presentation. Previous experience has shown that the items used in IALS and ALL can be developed for computer delivery without negatively impacting their item characteristics. In addition, it will be important that countries implement high quality sampling procedures to ensure that they obtain good representative samples.

26. In the event that there was a significant mode effect in the data, the consequences could be managed. Alternative strategies (such as equating) exist which could be implemented to establish trends. While equating would not represent as strong a methodology as linking as it will be associated with larger errors, it will allow the goals of PIAAC to be met.