

XA9540282

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OVERVIEW OF SAT

R. Spinney, USA

A Brief History of SAT

- ***1950's Behavioral psychology - small step instruction with feedback***
- ***1960's Programmed instruction - instructional feedback and reinforcement***
- ***1970's ISD (born of technological advances) - a tool to ensure training matches needs of job and of learner***
- ***1980's TSD ⇒ SAT adopted by the USA NPPs***
- ***Today SAT tailored to NPP needs***

Objectives and Expectations

- ***To introduce SAT concepts***
- ***To discuss Plant Management's role in SAT***



- ***For the participants to describe SAT terminology and concepts, and to list the SAT activities that are Plant Management's responsibility***
- ***In the long-term, for the participants to apply the SAT concepts to the training & qualification of their staffs***

Definitions & Concepts

- ***Systematic (or Systems) Approach***
- ***Training***
- ***Systematic Approach to Training***

SAT Questions

- ***"The quality of a training program is directly related to the amount of plant management involvement."
True or False***
- ***Why do we need an SAT?***
- ***Where do we start?***

Key Characteristics of Quality Training

- ***Relevant to the job***
- ***Training is timely***
- ***Instructionally effective and challenging***
- ***Technically accurate***
- ***Improves job incumbent performance***

SAT Benefits

An effective SAT-based training and qualification system accomplishes the following:

- 1. Identification of what training should be provided for each position (based on analysis of job performance requirements and initial qualifications of trainees).***
- 2. Design and development of training programs with explicit learning objectives and appropriate content.***
- 3. Conduct of training as designed.***
- 4. Trainees' mastery of the learning objectives before they begin working in their assigned positions.***
- 5. Evaluation of training effectiveness and the use of these results to maintain and improve training.***

The training program based on the SAT model has the following advantages over a conventional training program:

- 1. It permits effective management control. Because measurable objectives are established and performance is evaluated and documented regularly, those responsible for training can measure and correct performance.***
- 2. It is fully accountable. It includes training in skills and knowledge required to perform the job properly, as determined through systematic analysis.***
- 3. It supports teamwork by providing a framework for more effectively using the talents of plant and training personnel.***
- 4. It is cost-effective. Only elements required for proper job performance are included; resources can be allocated properly and justified.***

Other NPP Improvements Resulting from Application of SAT

- ***Plant procedures***
- ***Plant drawings***
- ***Job applicant screening and testing***
- ***Personnel job descriptions***
- ***Emergency preparedness and response***

SAT Phases

- 1.a. NEEDS ANALYSIS** - *The systematic process of collecting data on human resource requirements and performance deficiencies, and determining which needs can best be satisfied through training. Triggering events include plant and industry events, requests for training, feedback from the evaluation phase of the SAT model.*
- *Plant involvement here includes the analysis (e.g., root cause analysis) of those triggering events to ensure that the responsible or corrective actions are, in fact, training.*
- 1.b. JOB ANALYSIS** - *The identification of job attributes such as entry-level requirements and tasks performed. The outcome is an approved task list for each technical training program/activity.*
- *Plant involvement here includes the review of the task list by peer panels and approval by the plant department manager.*
- 1.c. TASK ANALYSIS** - *The identification of a job's task elements (or actions) and skills and knowledge needed by the job holder in order to perform these tasks under specified conditions in accordance with established standards.*
- *Plant involvement here includes providing subject matter expertise for the technical review of the task analysis results.*

2. **DESIGN** - *The compilation and conversion of task data into learning objectives and job performance measures. The outcome is an approved course or program outline.*
 - *Plant involvement here includes the review and approval of the course/program outline.*

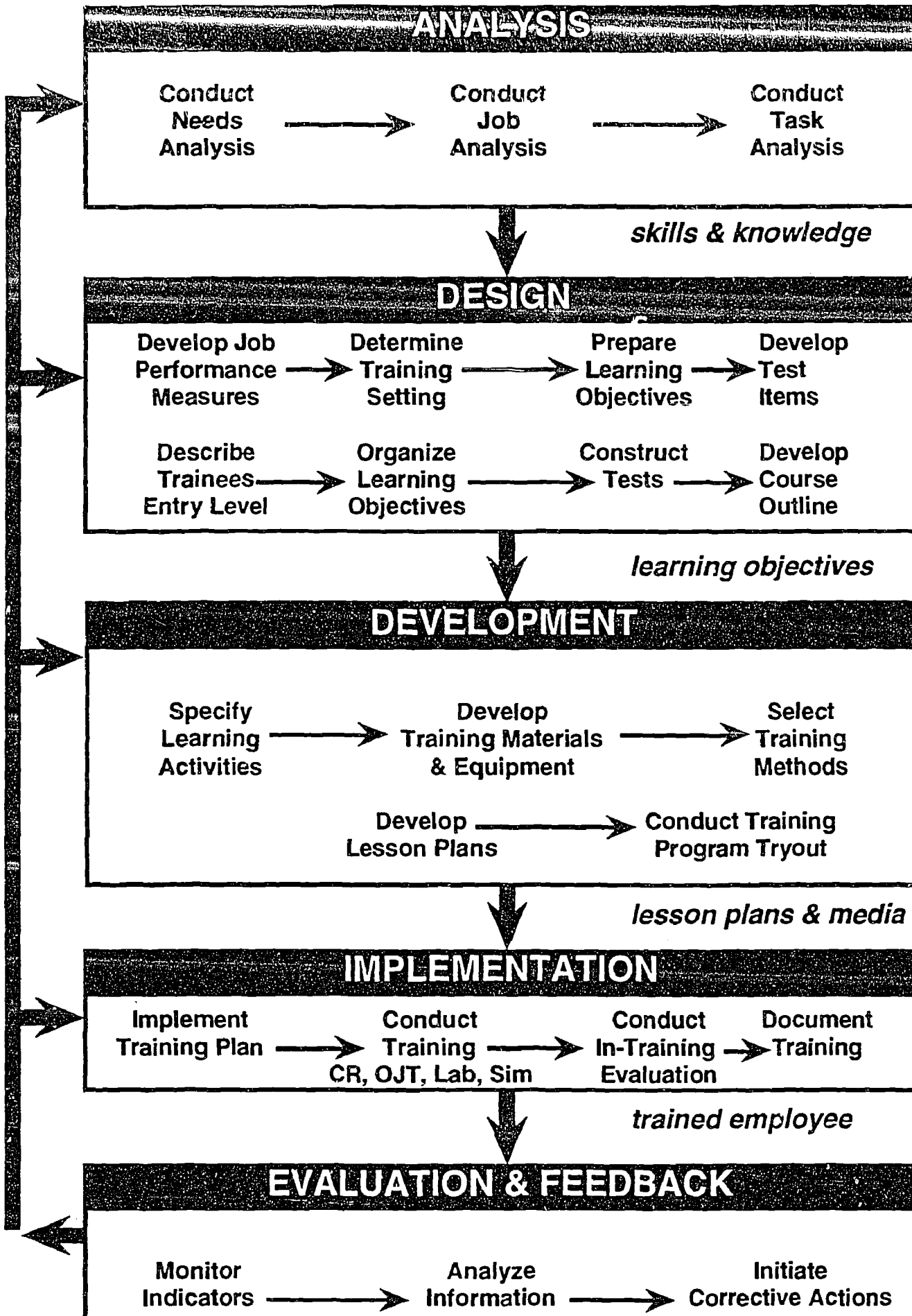
3. **DEVELOPMENT** - *The preparation of training materials and media. The outcome is a set of approved lesson plans, activities, and settings.*
 - *Plant involvement here includes validation of simulator scenarios and hands-on-training materials.*

4. **IMPLEMENTATION** - *The process of putting the training programs into operation. The outcomes are training instruction, in-training evaluation, and record-keeping.*
 - *Plant involvement here includes the observation and evaluation of the training being conducted -- especially during the first offering.*

5. **EVALUATION** - *The process of monitoring the various training indicators to maintain and improve the training programs and systems.*
 - *Plant involvement here includes feedback on how well the training graduates are performing on the job.*

These SAT Phases are depicted on the next page.

Systematic Approach to Training



SAT Triggering Events

- ***New plant equipment***
- ***New/revised procedure***
- ***New regulatory req't***
- ***Feedback***
 - ***employee***
 - ***supervisor***
 - ***trainee***
 - ***instructor***
 - ***program evaluation***
- ***Plant/industry event***
- ***Root cause analysis and corrective action***
- ***Administration problem***
- ***Training process problem***
- ***Performance deficiency***
- ***New job or training standard***
- ***Exam failure***
- ***Team issues (Command, Control, & Communication)***

Screening Resource Documents and Analyzing Performance Problems

- ***Organizational Level***
 - *Prevailing Corporate Culture*
 - *Immediate Climate*
 - *Organizational Goals and Strategies*
 - *Technology*
 - *Resources*
 - *Communication*
 - *Human Resources Policies*
- ***Work Level***
 - *Job Design*
 - *Regulation*
 - *Environment*
 - *Documentation*
 - *Communication*
- ***Job/Task Level***
 - *Motivation*
 - *Knowledge and Skills*

Recurring Training Weaknesses (Actual Examples)

- ***Trainee's task performance insufficiently monitored by the evaluator***
- ***Task performance evaluations not conducted for such independently performed tasks as surveillances and trouble-shooting***
- ***Management monitoring of OJT insufficient to detect the problems above***
- ***Some personnel often miss scheduled continuing training***
- ***Training materials not revised in a timely manner after plant mods, procedure revs, etc.***

Management Expectations for Training and Development

● ***For Plant Management:***

- *ownership of the training*
- *responsible for personnel performance*
- *determine their staff's training needs*
- *coach to reinforce formal training*
- *allocate appropriate resources to support the training mission*

● ***For Training Staff:***

- *develop and deliver quality training programs based on a SAT*
- *integrate training schedules with the plant time req'ts or constraints*
- *set high stds for effectiveness*

● ***For all employees:***

- *attend and strive for excellence in training*
- *apply the training to their jobs*
- *identify own training needs*

Training-related Accountability and Expectations for Plant Supervisors and Managers

Accountability:

Maintain highly qualified personnel by involvement with and oversight of their training, qualification, and development

Expectations:

- ***Be actively involved in initial and continuing training programs by:***
 - ***Identifying and feeding back training needs***
 - ***Reviewing and approving training materials that affect your staff; e.g., training advisory groups***
 - ***Ensuring attendance at scheduled classes***
 - ***Assure staff maintains qualifications current for all assigned positions***
- ***Observe scheduled training and provide feedback to instructional staff***
- ***Maintain an individual development plan for each staff and update annually***

Training-related Accountability and Expectations for Instructional Staff

Accountability:

Develop and deliver QUALITY training programs based on SAT

Expectations:

- ***Be actively involved in determining initial and continuing training needs***
- ***Preparing and conducting training that is current and relevant to the job positions***
- ***Ensuring training schedules are integrated effectively with the plant time req'ts or constraints***
- ***Maintaining own technical and instructional skills***

Training-related Accountability and Expectations for Individuals

Accountability:

Maintain qualification in assigned jobs by completing scheduled training and development

Expectations:

- ***Be actively involved in initial and continuing training by:***
 - ***Being alert and receptive to training***
 - ***Providing constructive feedback***
 - ***Completing training exercises in a manner that promotes learning***
 - ***Providing examples of in-field lessons-learned during training discussions***

- ***Conducting self in a professional manner during training***

- ***Attend scheduled training and take personal responsibility for own qualification in all assigned duties***

Plant Manager Responsibilities For Training and Qualification (T&Q)

- ***Plant Manager Standards of Performance***
- ***Personnel Selection and Development***
- ***Personnel Training and Qualification***
- ***Exemptions***
- ***Technical Supervision of Trainees***
- ***OJT and Task Performance Evaluation***
- ***Contractor Training and Qualification***
- ***Observation and Evaluation of Training***
- ***Dissemination of Information***
- ***Developing Personnel Attitudes***
- ***Use of Operating Experience in Training***

Example Plant Manager Responsibilities For Training & Qualification (T&Q)

- ***Plant managers are responsible for the effective conduct of T&Q programs***
- ***Plant managers ensure that the content and conduct of the T&Q programs will produce competent and professional workers and supervisors***
- ***Plant and training managers ensure that personnel attend required training or participate in timely makeup training***
- ***Feedback from plant managers, supervisors, trainees, and former trainees is used to evaluate and modify the training program***

***Example Plant Manager Responsibilities
For T&Q
(Continued)***

- ***On-the-job training and evaluation are conducted by designated individuals who have received instructions on providing effective training and evaluation***
- ***On-the-job evaluation of trainee performance is conducted to verify that the trainee has obtained the essential performance skills associated with their tasks***
- ***Qualification standards and evaluation methods are adequate to verify trainee competence***
- ***Task-specific qualification requirements are identified, completed, and documented prior to personnel being assigned to perform the task independently***

A Test of Plant Managers' Ownership of Training and Qualification Programs

- *How well do personnel perform assigned tasks?*
- *How effective is initial classroom, laboratory, simulator, and on-the-job training and task performance evaluation in providing the knowledge and skills necessary for personnel to work in a safe, competent manner?*
- *Is training material up to date prior to use?*
- *How does the timeliness of training topics compare with the current station needs?*
- *Are personnel attending the training for which they are scheduled?*
- *Which specific plant organization training needs have been communicated to the training dept. so these needs can be met?*
- *How has the plant organization provided the support needed by the training organization so identified training needs are accomplished?*
- *Do trainers focus on equipment and system problems and solutions to these problems?*
- *How effectively does the plant organization use the training organization as a resource?*
- *What specific training currently needs to be implemented?*

- *How well do personnel recognize that the knowledge and skills they develop in training will be needed in their jobs? How much time is provided for personnel to attend these training sessions?*
- *What training is conducted by the plant organization to provide needed instruction not supported by the training organization?*
- *How are in-house and industry operating experiences used to provide relevancy to training?*
- *Do plant managers and supervisors routinely monitor and assess personnel performance? How are these observations used to improve supervisor and personnel performance during training?*

OPPORTUNITIES FOR IMPROVEMENT

Feedback From Previous USA SAT Courses

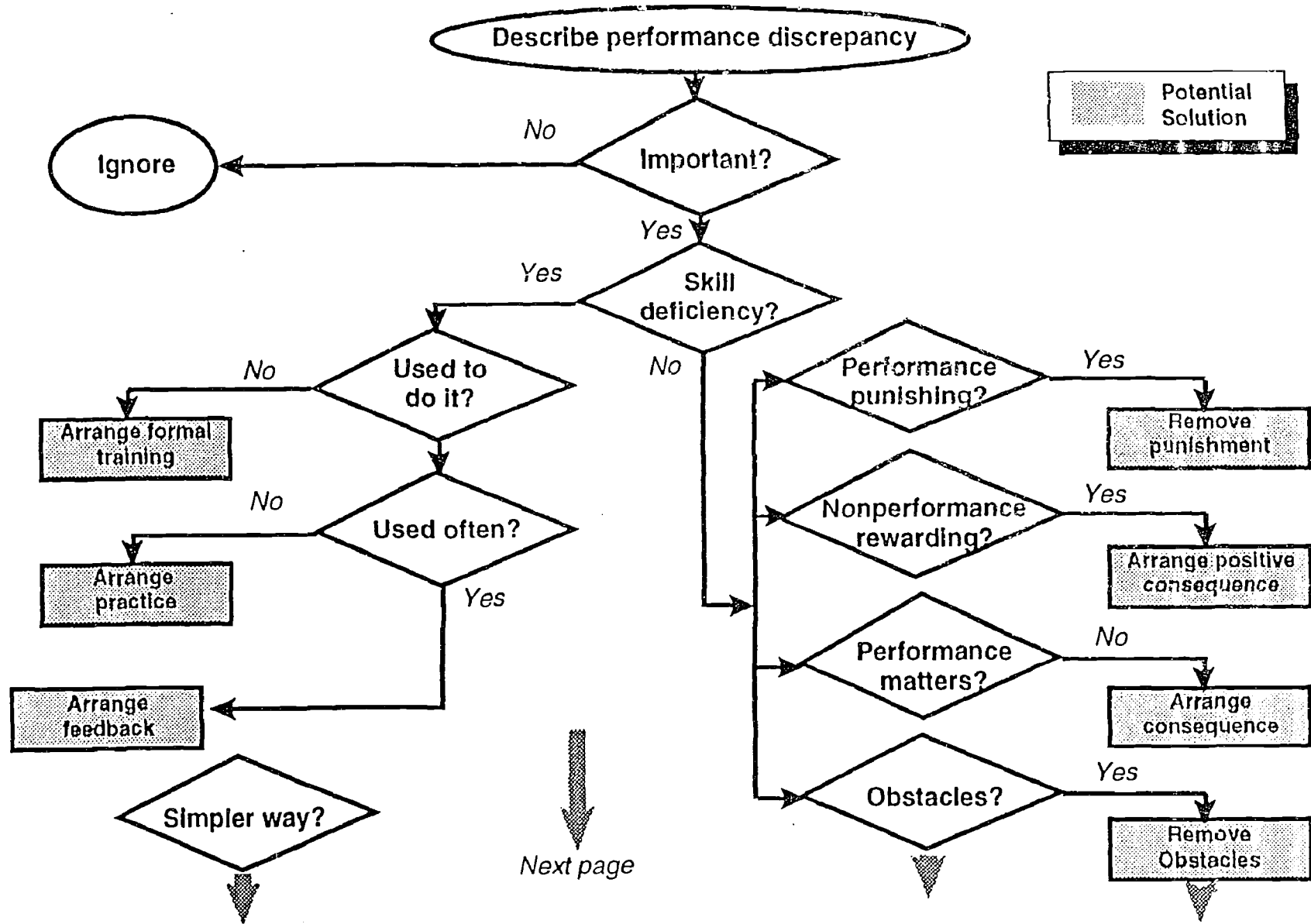
- ***On-call training instructors***
- ***Maintenance and technical continuing training needs to be improved***
- ***Need integrated annual (1 year look-ahead) schedule, integrating training with the work schedule***
- ***Training on modifications and changes needs improvement***
- ***Too much redundant training***
- ***Management systems training needs to be updated***
- ***Exemption requirements not well understood***
- ***Send trainers into the field to solicit training needs***
- ***Use community college courses***
- ***Use more adjunct instructors or SMs***
- ***More training support during outages***
- ***Feedback forms need improvement***
- ***Qualification Cards too cumbersome***

OPPORTUNITIES FOR IMPROVEMENT
Feedback From Previous USA SAT Courses
(Continued)

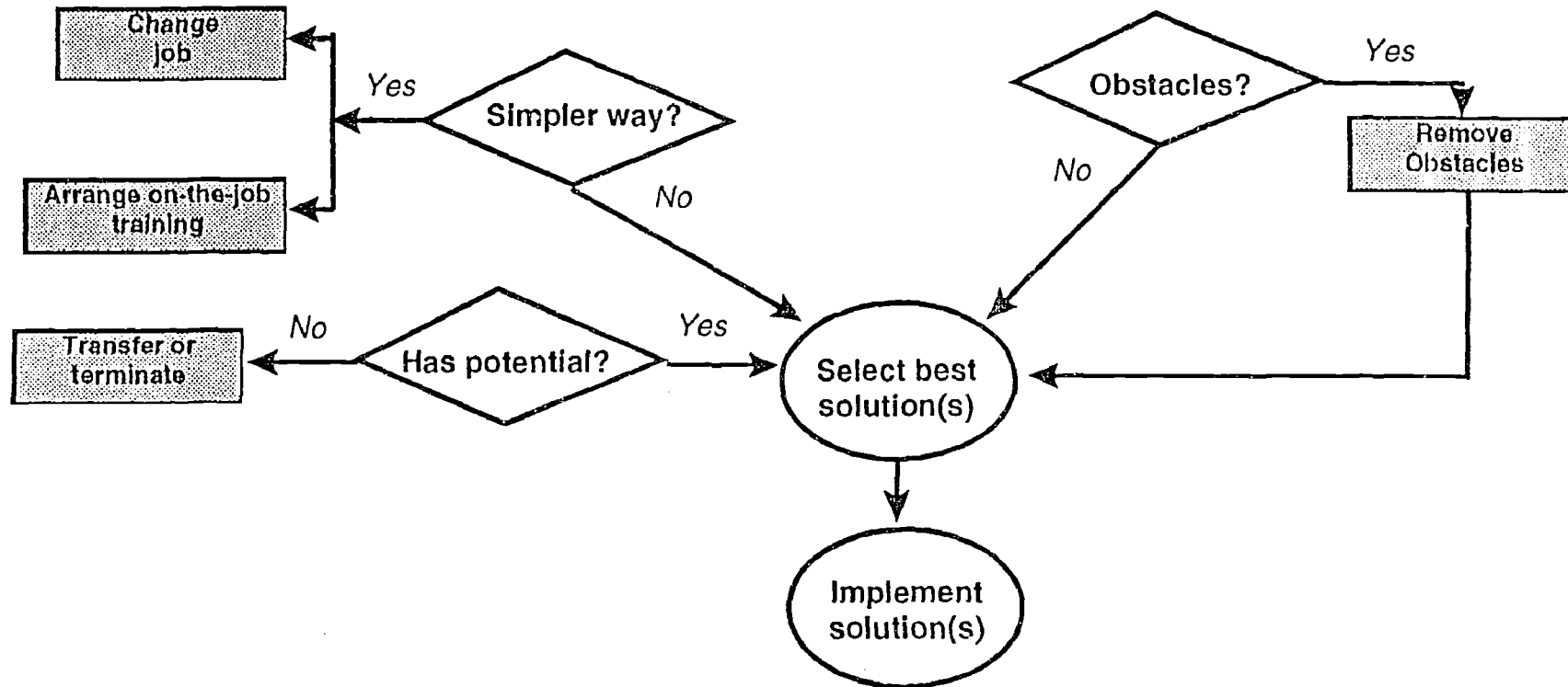
- ***Close the loop on training review committee decisions (i.e., whether or not recommendations are implemented)***
- ***Need more initial and refresher systems training that is tailored***

ATTACHMENT
SAT Flowcharts

Analyzing Performance Problems

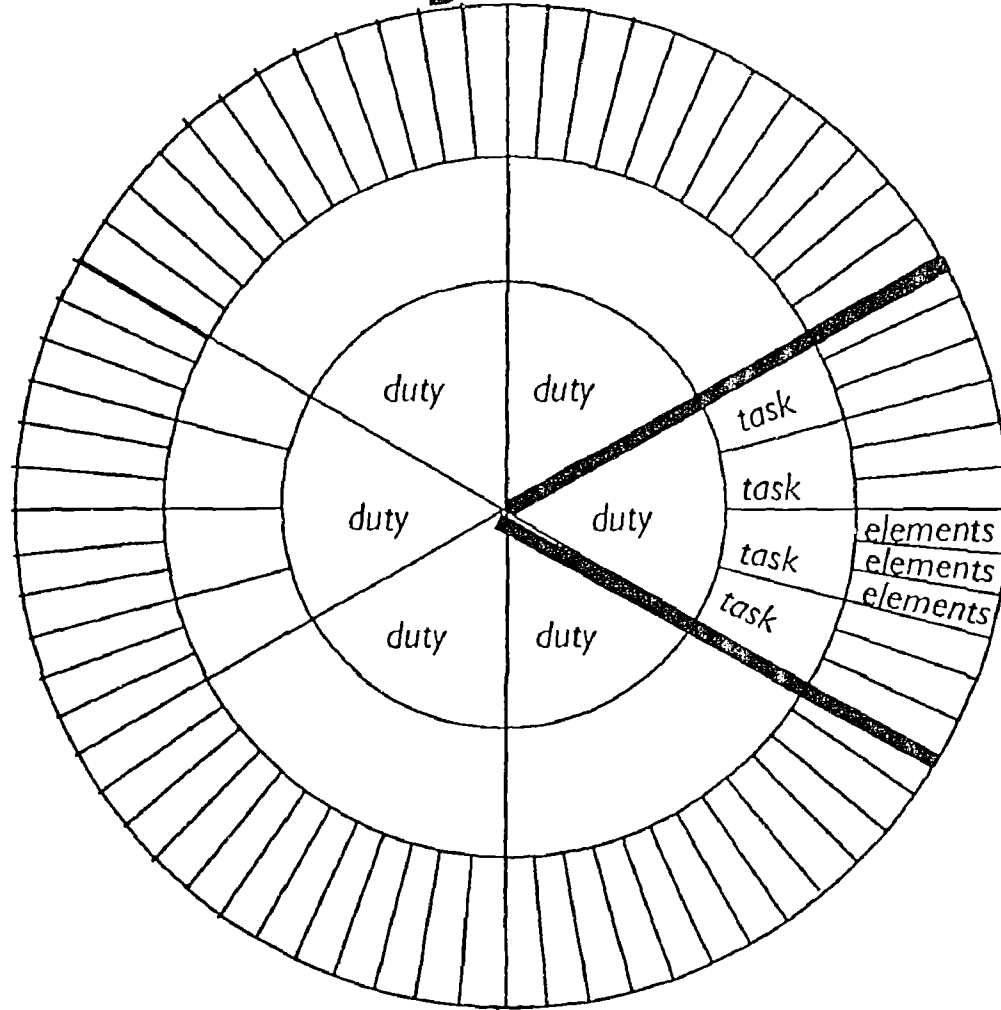


Analyzing Performance Problems



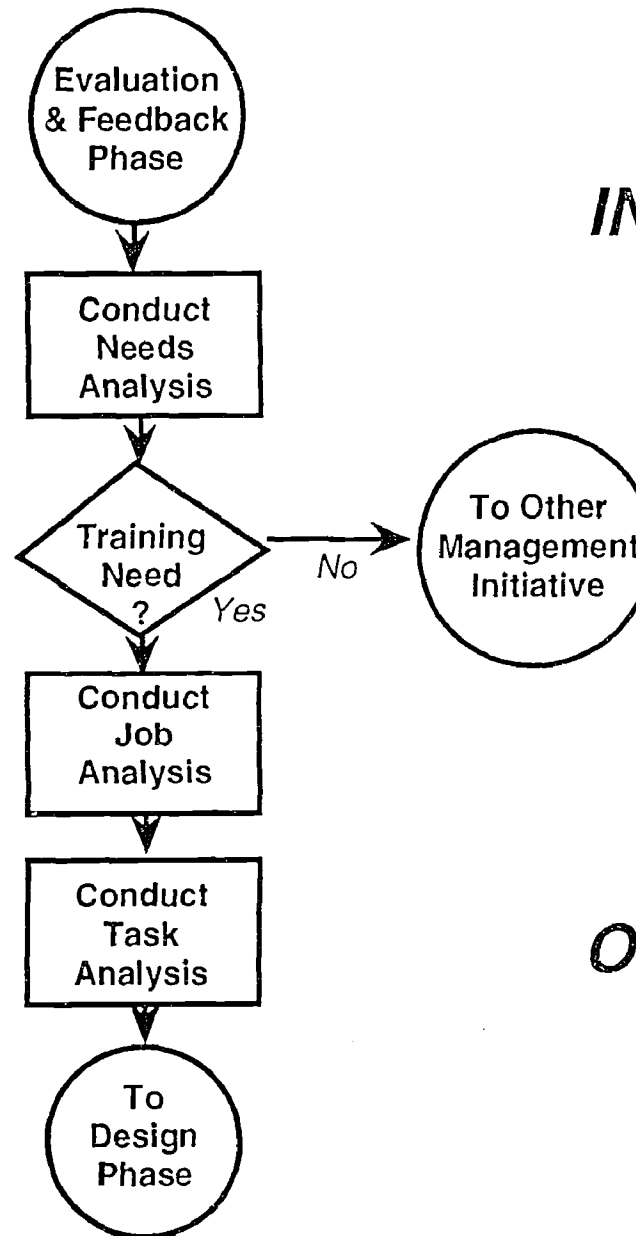
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Job



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Analysis



INPUTS:

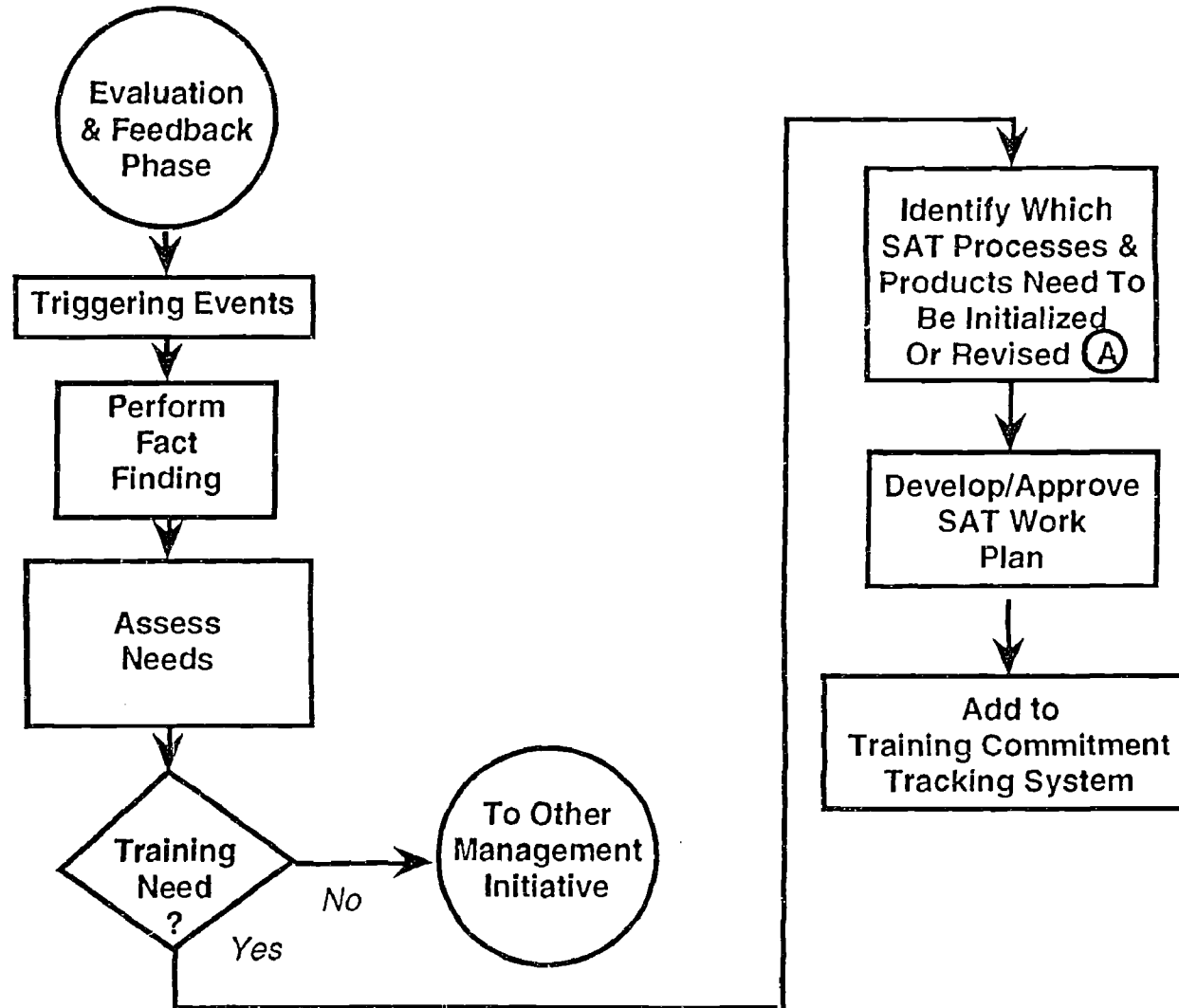
- Management Recommendations
- Potential Human Resources Changes
- Job Performance Problems
- Training Program Evaluation Recommendation(s)

OUTPUTS:

- Training Needs
- Job Tasks
- Tasks Selected for Training
- Skill, Knowledge and Attitude Requirements

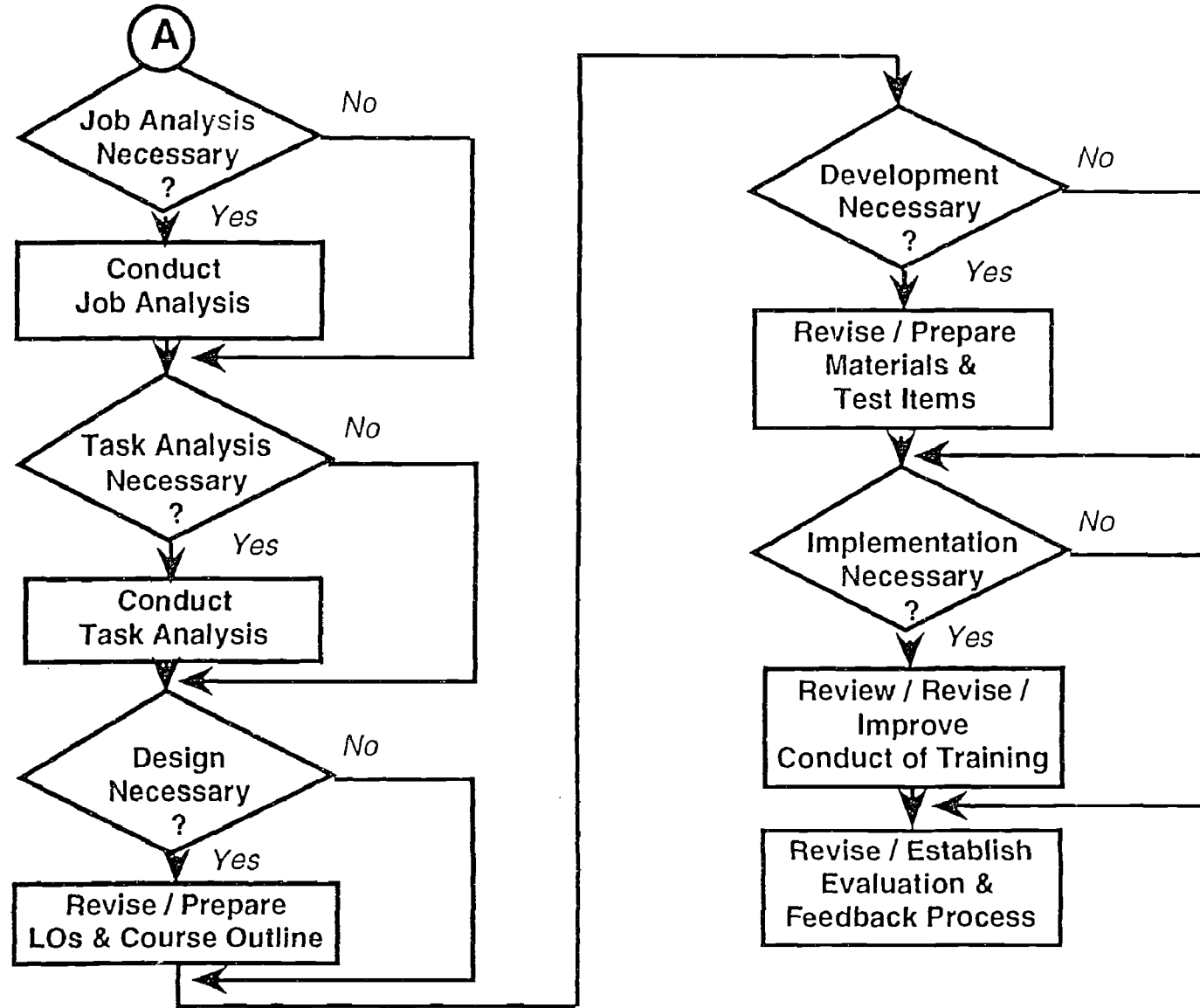
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Needs Analysis

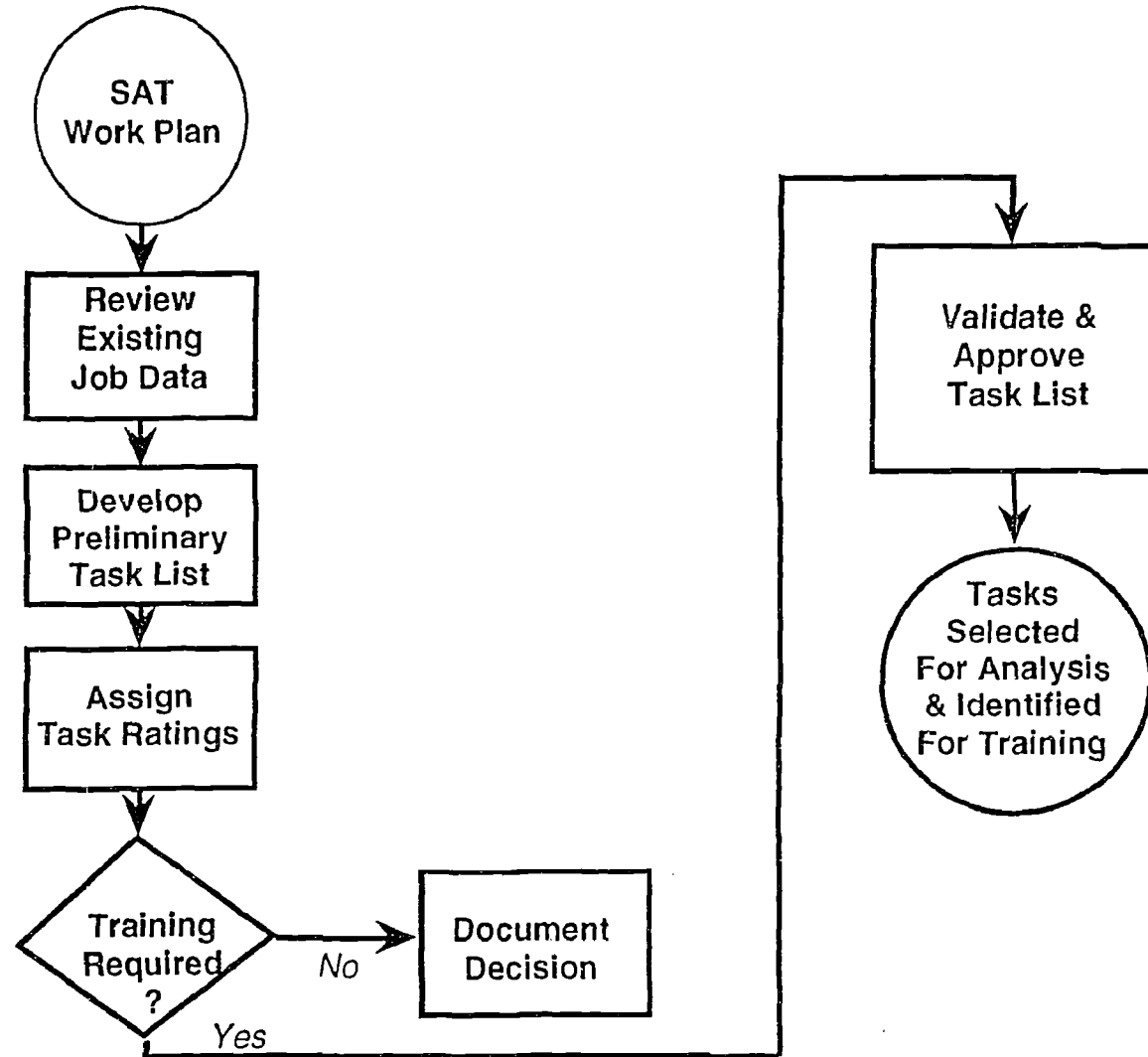


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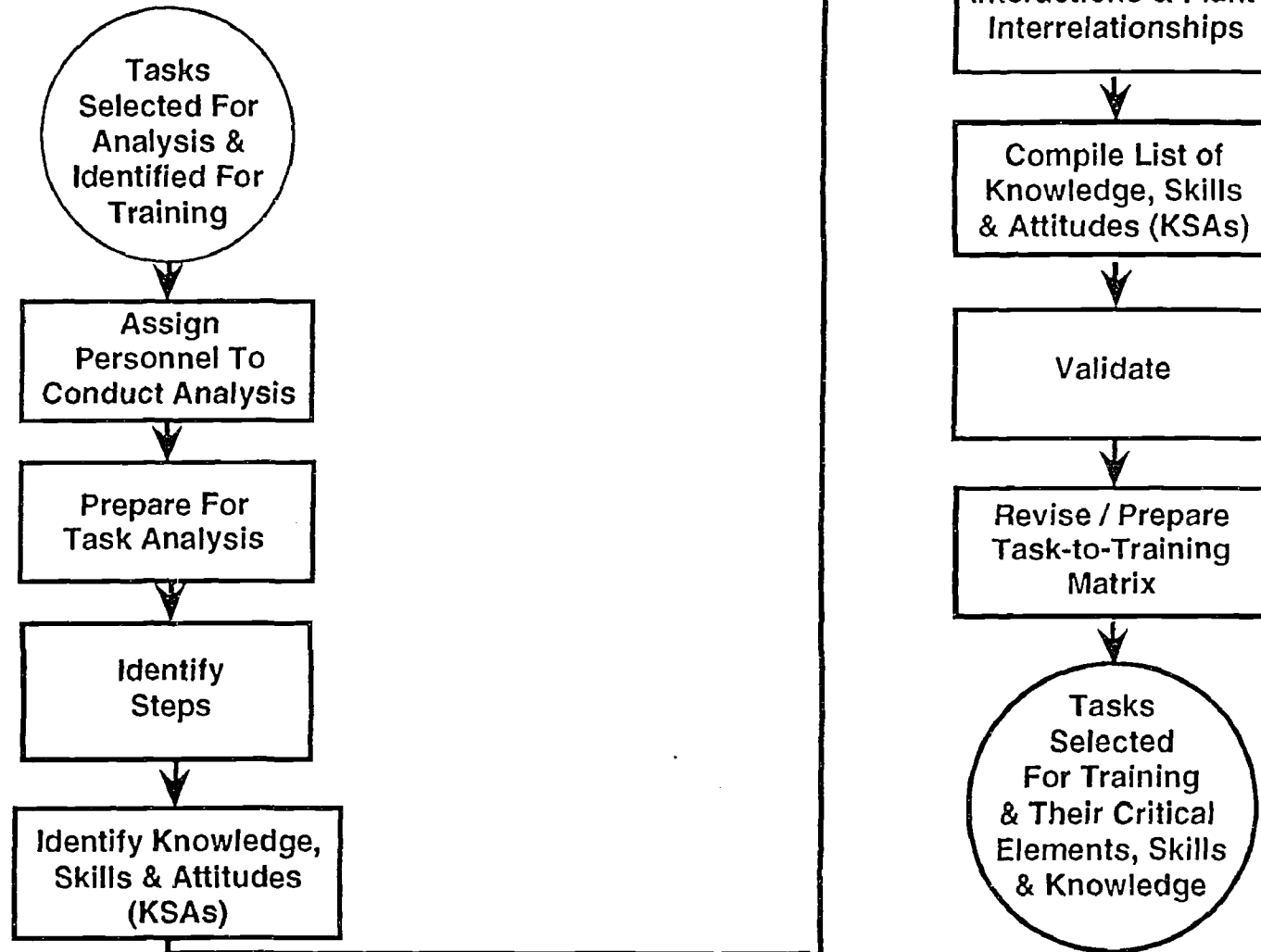
Needs Analysis (Detail)



Job Analysis

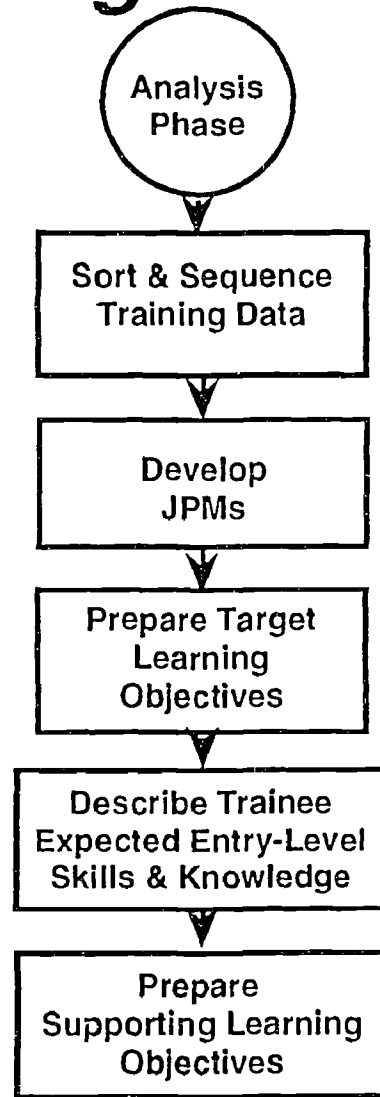


Task Analysis



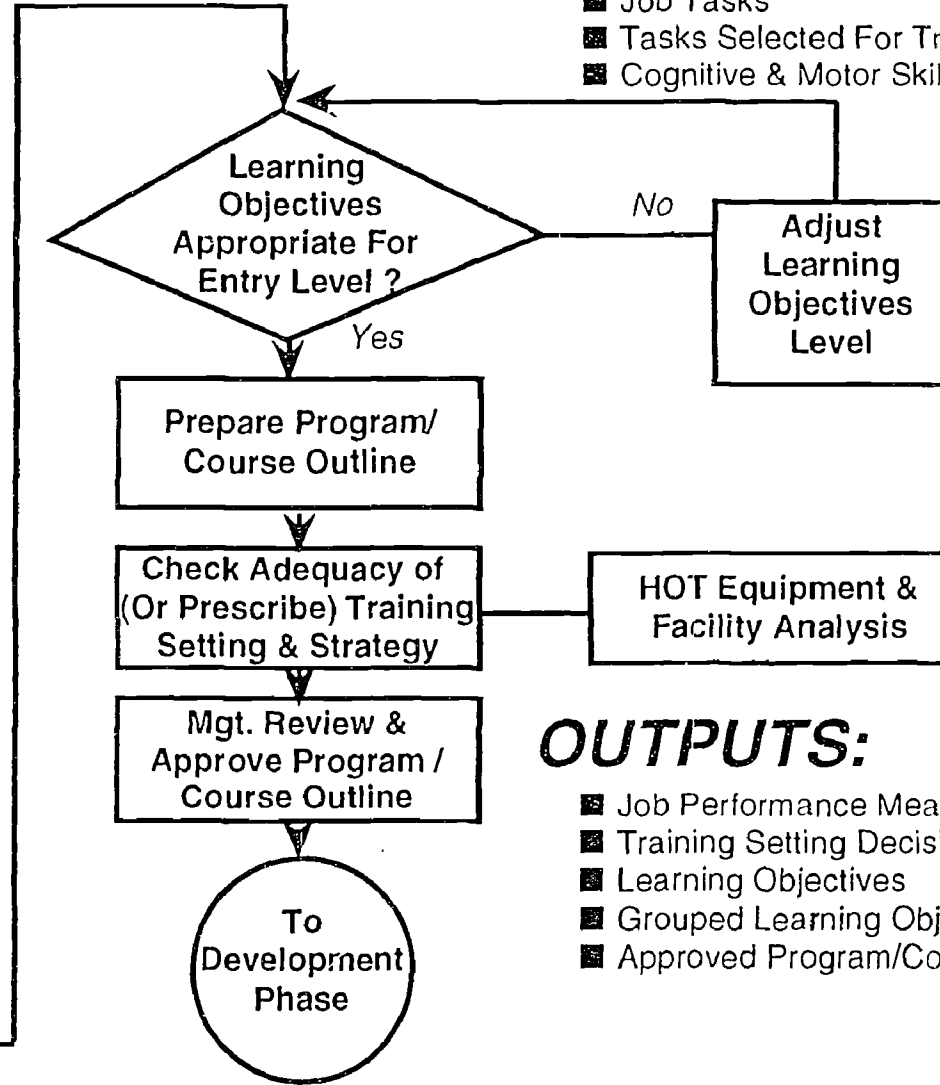
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Design



INPUTS:

- Training Needs
- Job Tasks
- Tasks Selected For Training
- Cognitive & Motor Skills, Attitudes

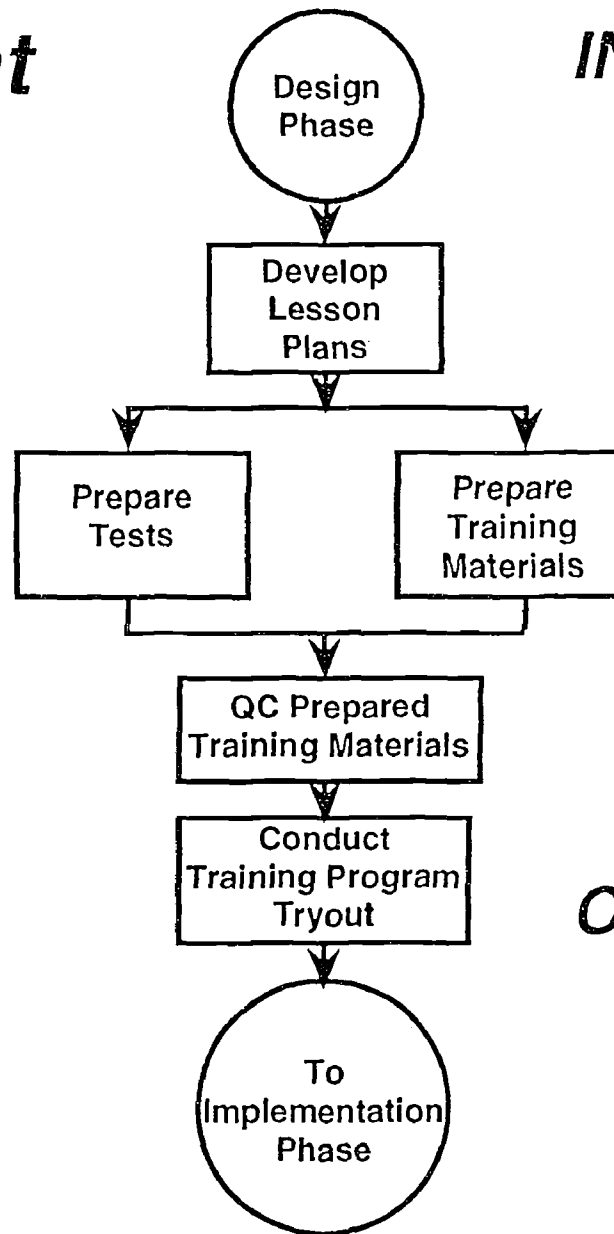


OUTPUTS:

- Job Performance Measures
- Training Setting Decisions
- Learning Objectives
- Grouped Learning Objectives
- Approved Program/Course Outline

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Development



INPUTS:

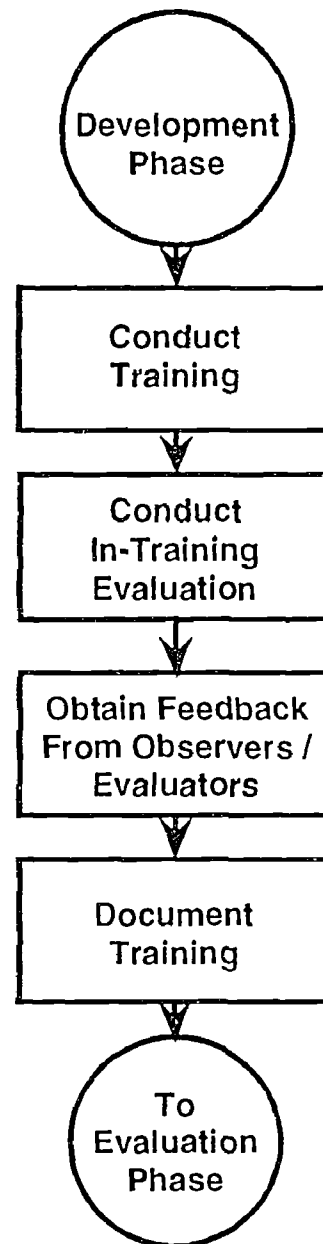
- Job Performance Measures
- Training Setting Decision
- Learning Objectives
- Grouped Learning Objectives
- Approved Program/Course Outline

OUTPUTS:

- Training Materials
- Lesson Plans
- Test Items
- Tests
- Tryout Results / Revisions

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Implementation



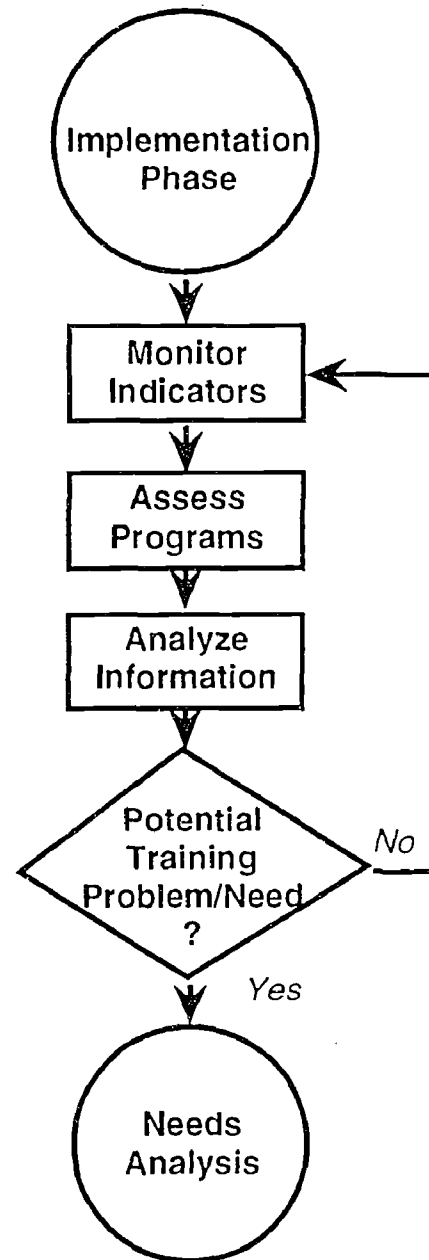
INPUTS:

- Training Materials
- Lesson Plans
- Tryout Results / Revisions

OUTPUTS:

- Trained Personnel
- In-Training Evaluation Data
- Training Records

Evaluation



INPUTS:

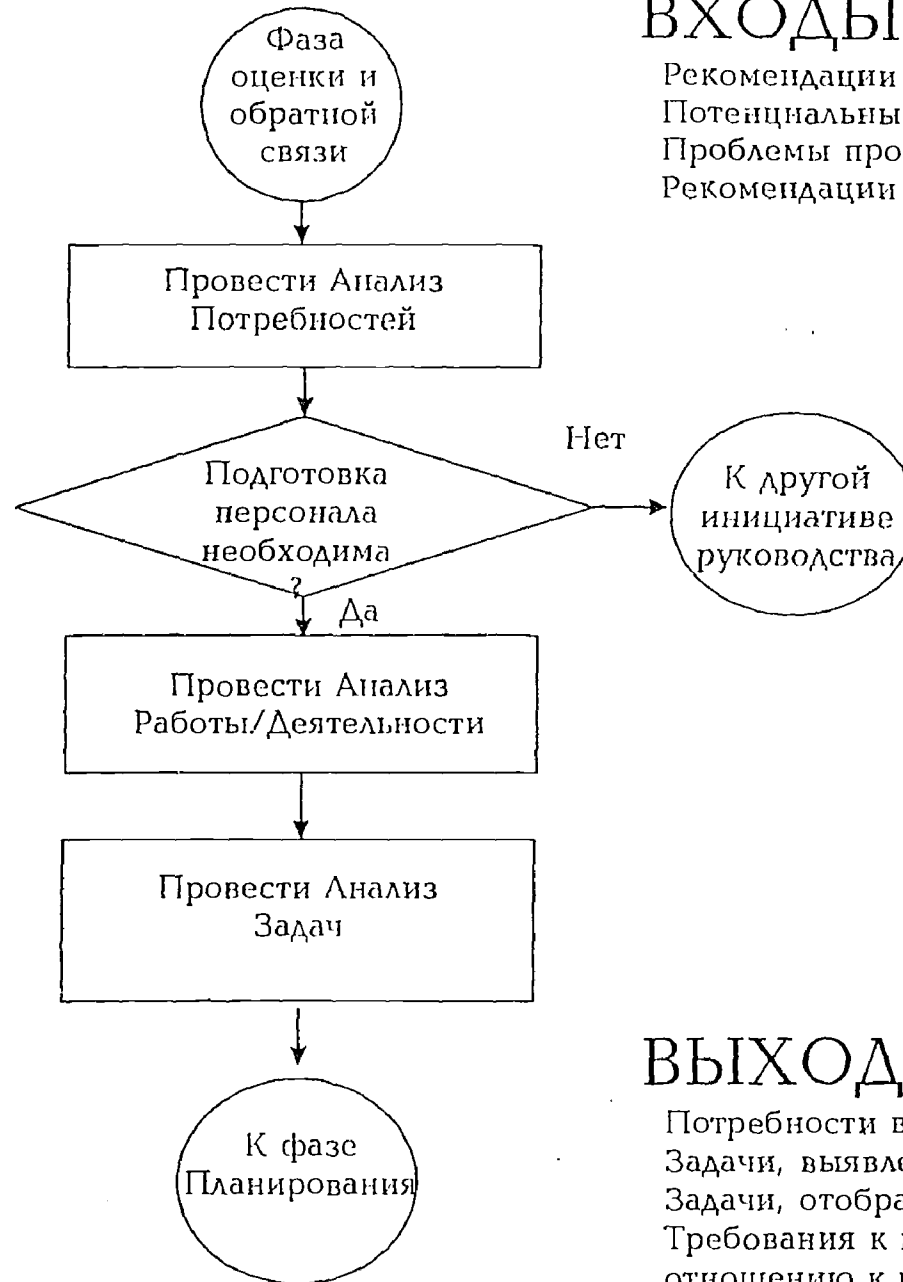
- Trained Personnel
- In-Training Evaluation Data
- Training Records

OUTPUTS:

- Trained Personnel
- In-Training Evaluation Data
- Training Records

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Анализ



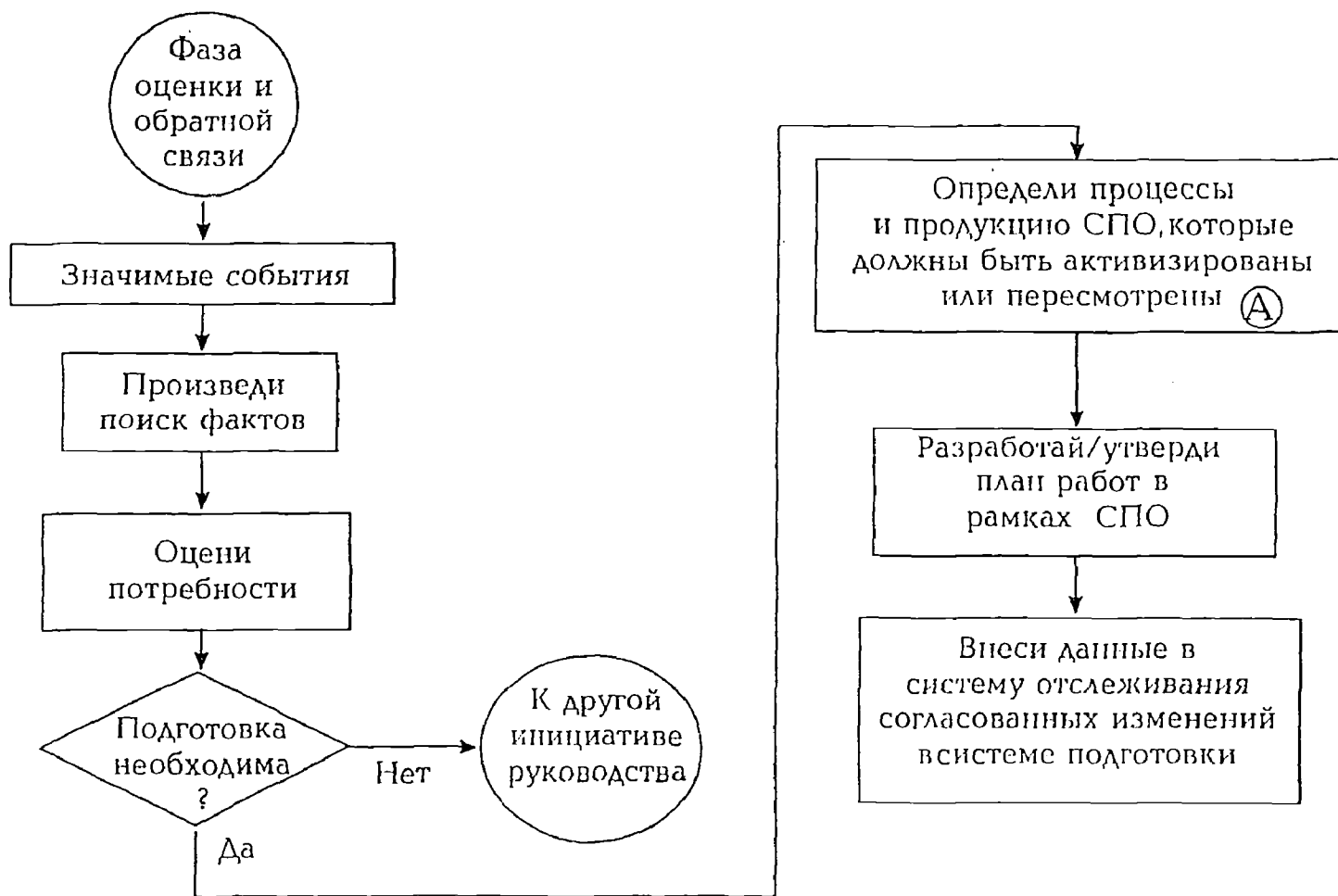
ВХОДЫ:

Рекомендации руководства
Потенциальные изменения человеческих ресурсов
Проблемы профессиональной деятельности
Рекомендации из оценки программ подготовки

ВЫХОД:

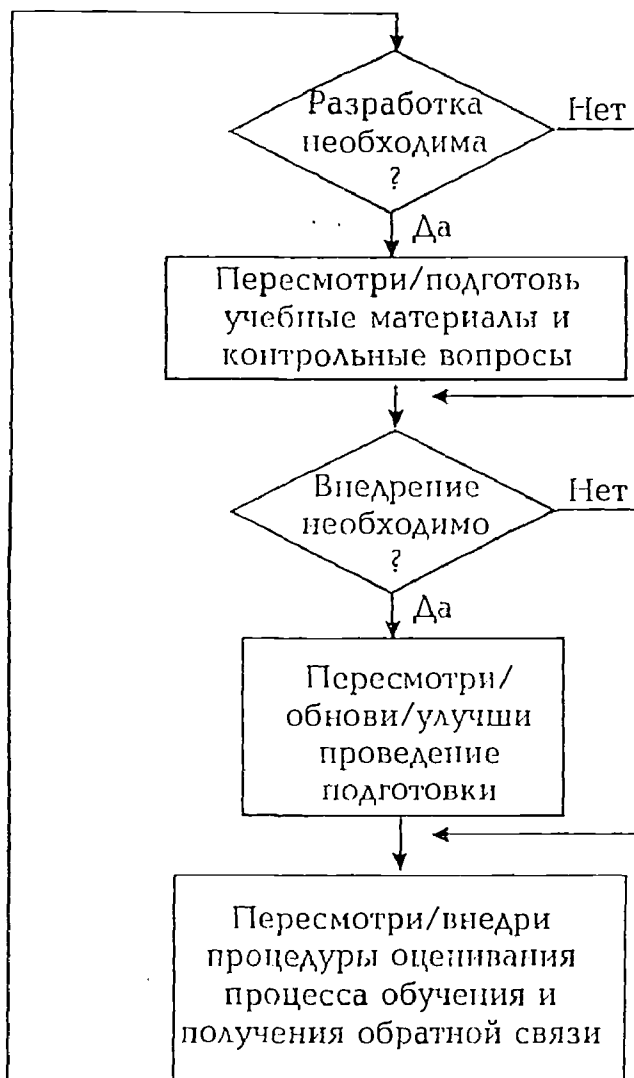
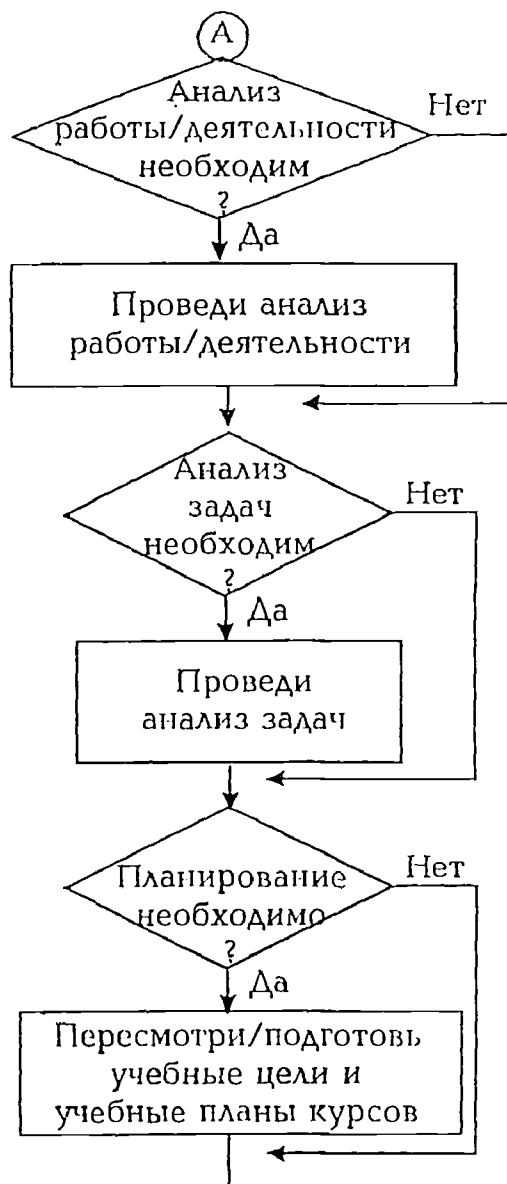
Потребности в подготовке персонала
Задачи, выявленные в деятельности персонала
Задачи, отобранные для подготовки
Требования к навыкам, знаниям и отношению к работе

Анализ потребностей в обучении

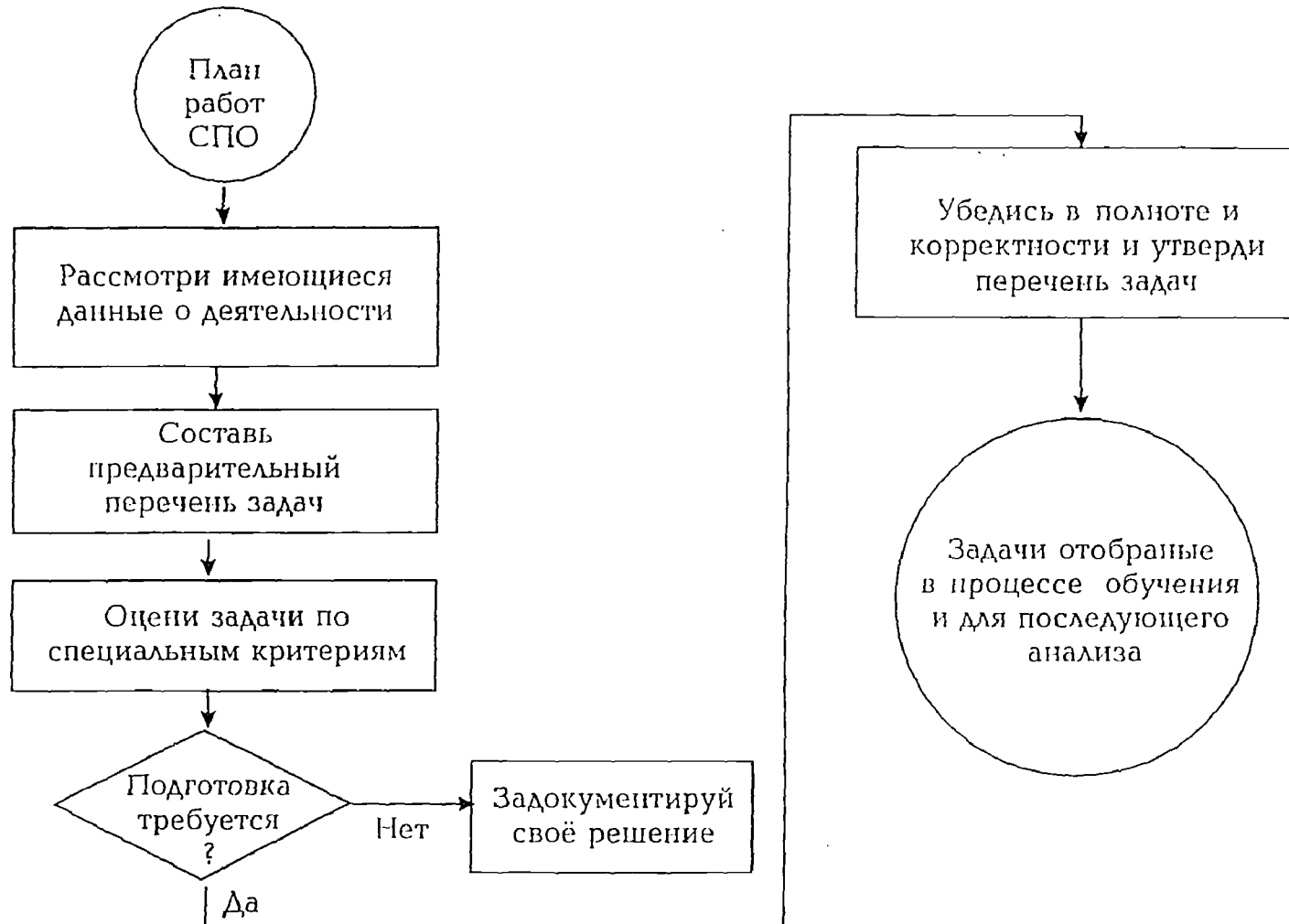


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Анализ потребностей (более подробное описание)



Анализ работы/деятельности



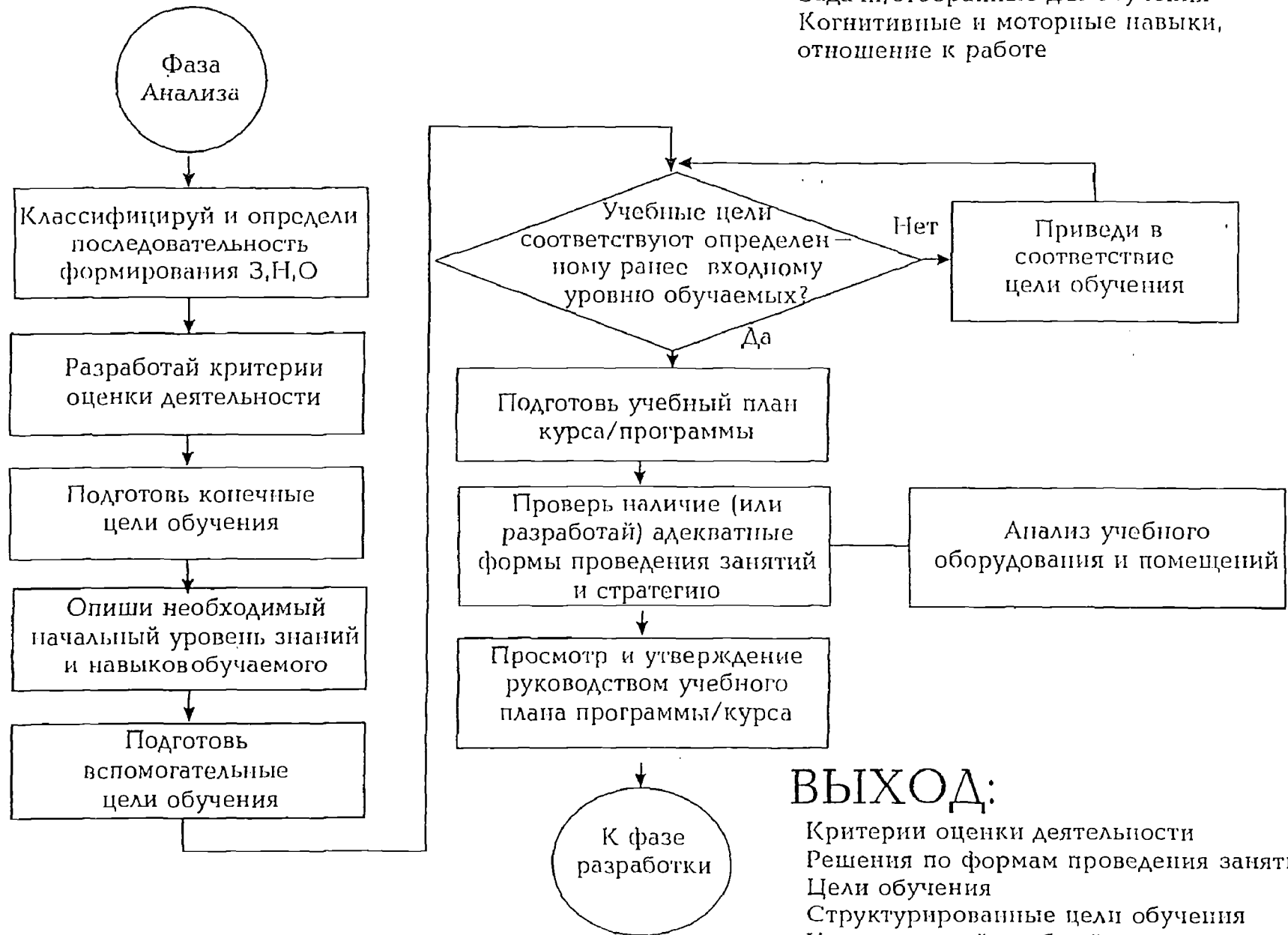
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Анализ задач



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Планирование



ВХОДЫ:

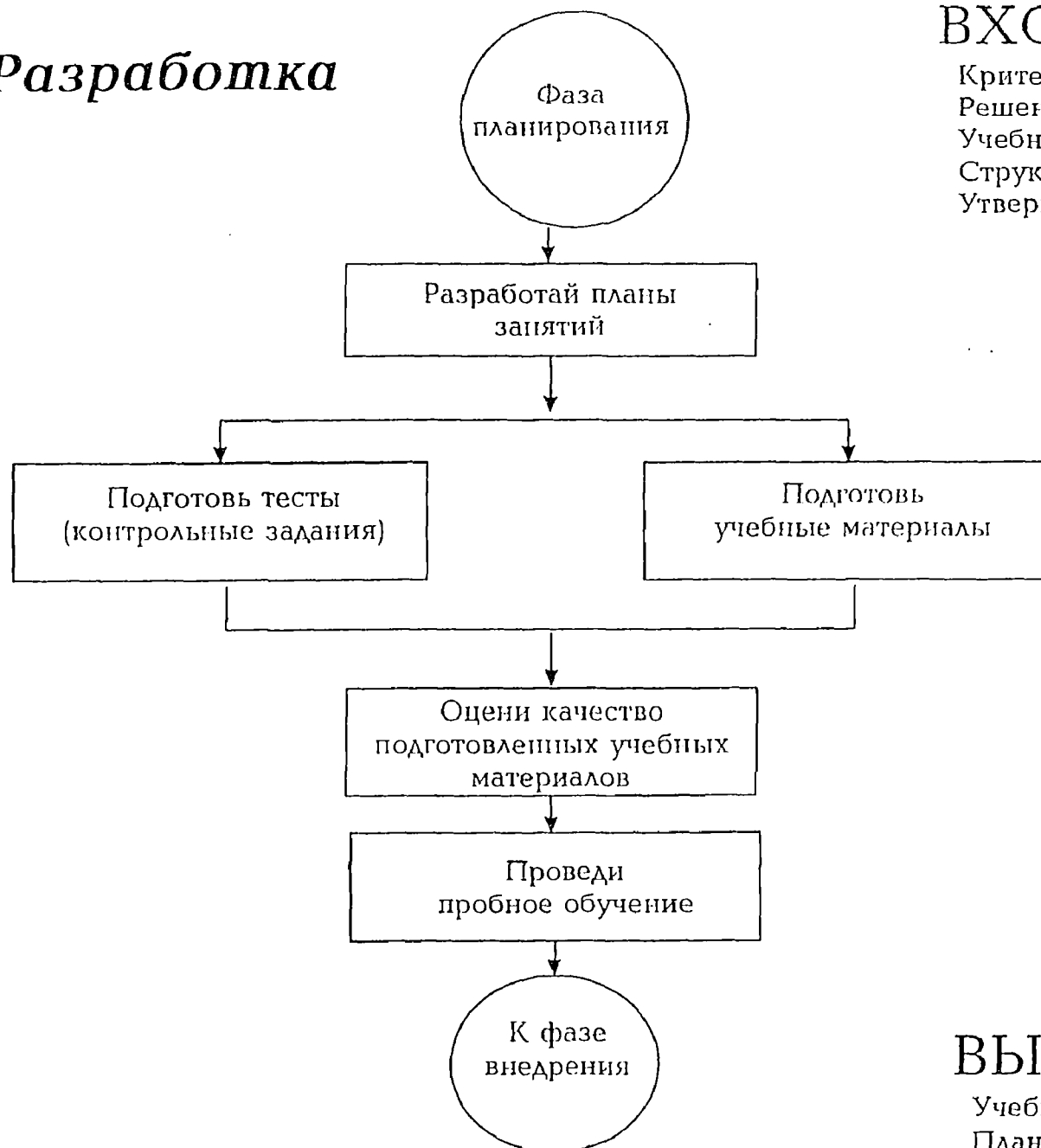
Потребности в подготовке
 Задачи в деятельности персонала
 Задачи, отобранные для обучения
 Когнитивные и моторные навыки,
 отношение к работе

ВЫХОД:

Критерии оценки деятельности
 Решения по формам проведения занятий
 Цели обучения
 Структурированные цели обучения
 Утвержденный учебный план программы/курса

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Разработка



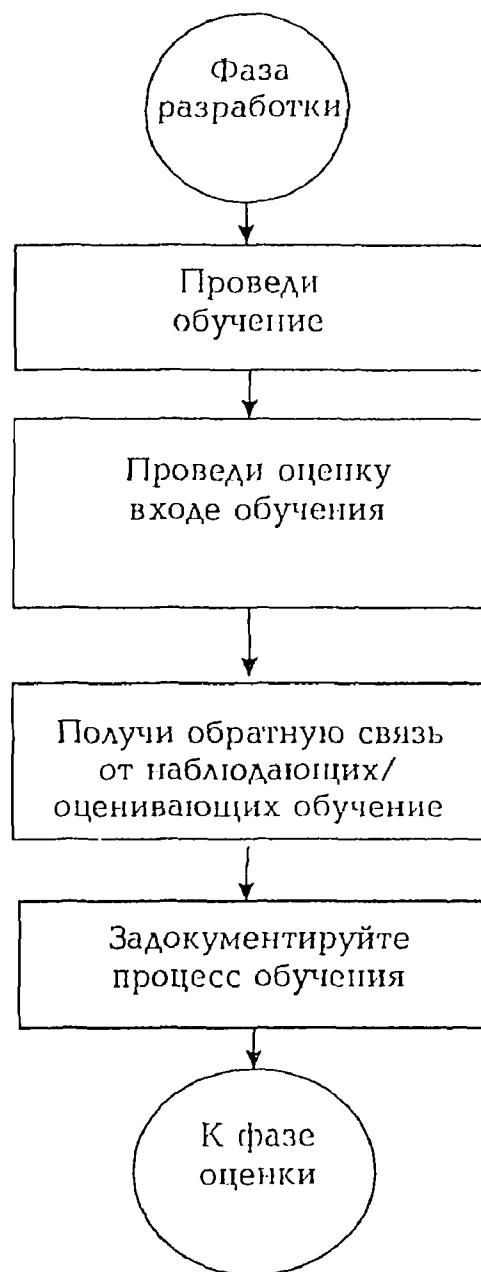
ВХОДЫ:

Критерии оценки выполнения деятельности
Решения по условиям проведения подготовки
Учебные цели
Структура учебных целей
Утвержденный учебный план курса/программы

ВЫХОД:

Учебные материалы
Планы занятий
Список контрольных заданий
Тесты (сами контрольные задания)
Результаты пробного обучения и необходимые изменения

Внедрение



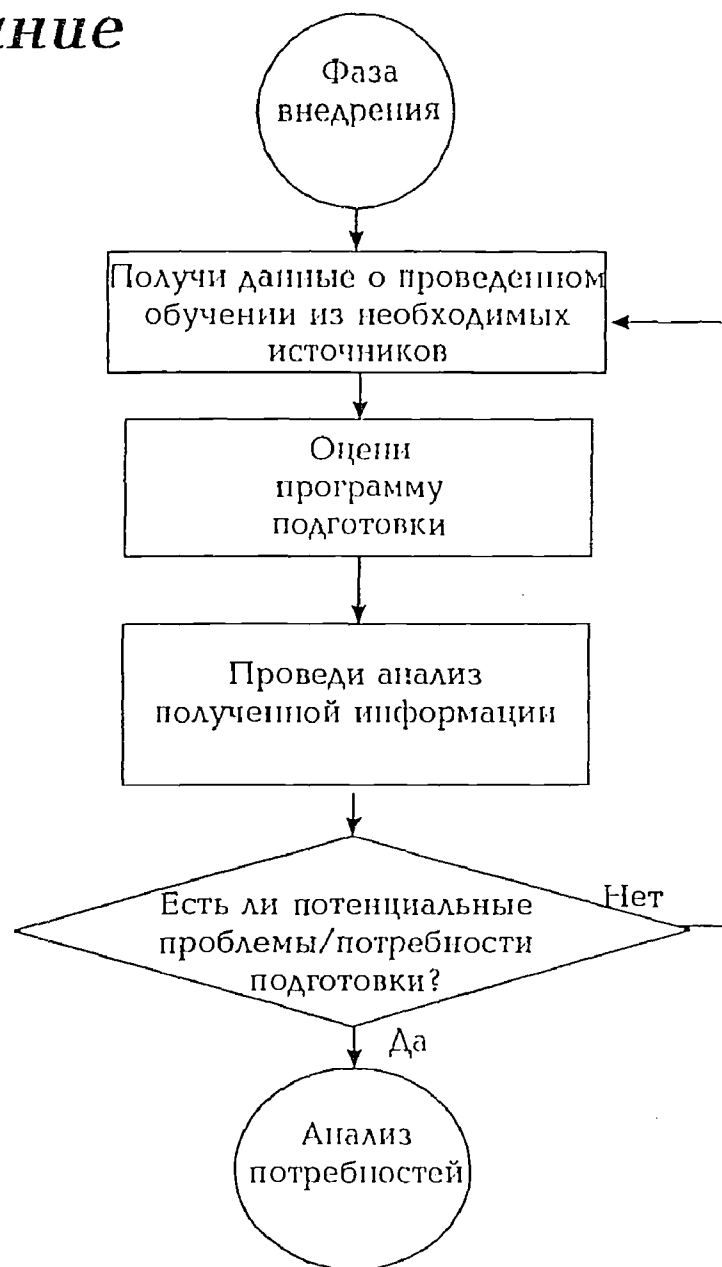
ВХОДЫ:

Учебные материалы
Планы занятий
Результаты пробного обучения и изменения

ВЫХОД:

Обученный персонал
Данные по оценке и анализу, полученные в ходе обучения
Записи о проведении обучения

Оценивание



ВХОДЫ:

Подготовленный персонал
Данные по оценке и анализу, полученные в ходе обучения
Записи о проведении обучения

ВЫХОД:

Рекомендации по коррекции текущего или будущего курсов/программ подготовки
Задокументированные данные фазы оценивания эффективности программы подготовки