



Trening unutar industrije Štedljiva proizvodnja - 2019 -

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Trening unutar industrije (1)

- Vlada SAD je 22. juna 1940. osnovala agenciju za obuku unutar industrije;
 - Bilo je neophodno obezbediti velike količine materijalnih dobara, čak iako Amerika ne bude učestvovala u ratu;
 - Kako bi se proizvodnja podigla na ratni nivo, bilo je neophodno obučiti milione neiskusnih radnika, poslovođa i menadžera;
 - Jedan od prvih problema koji je TWI trebalo da reši je nedostatak stručnih brusača sočiva neophodnih za izradu optičkih uređaja neophodnih u ratu.
-

Training Within Industry



"THE FOUR HORSEMEN"

1944

Dooley

Dietz

Conover

Kane

Trening unutar industrije (3)

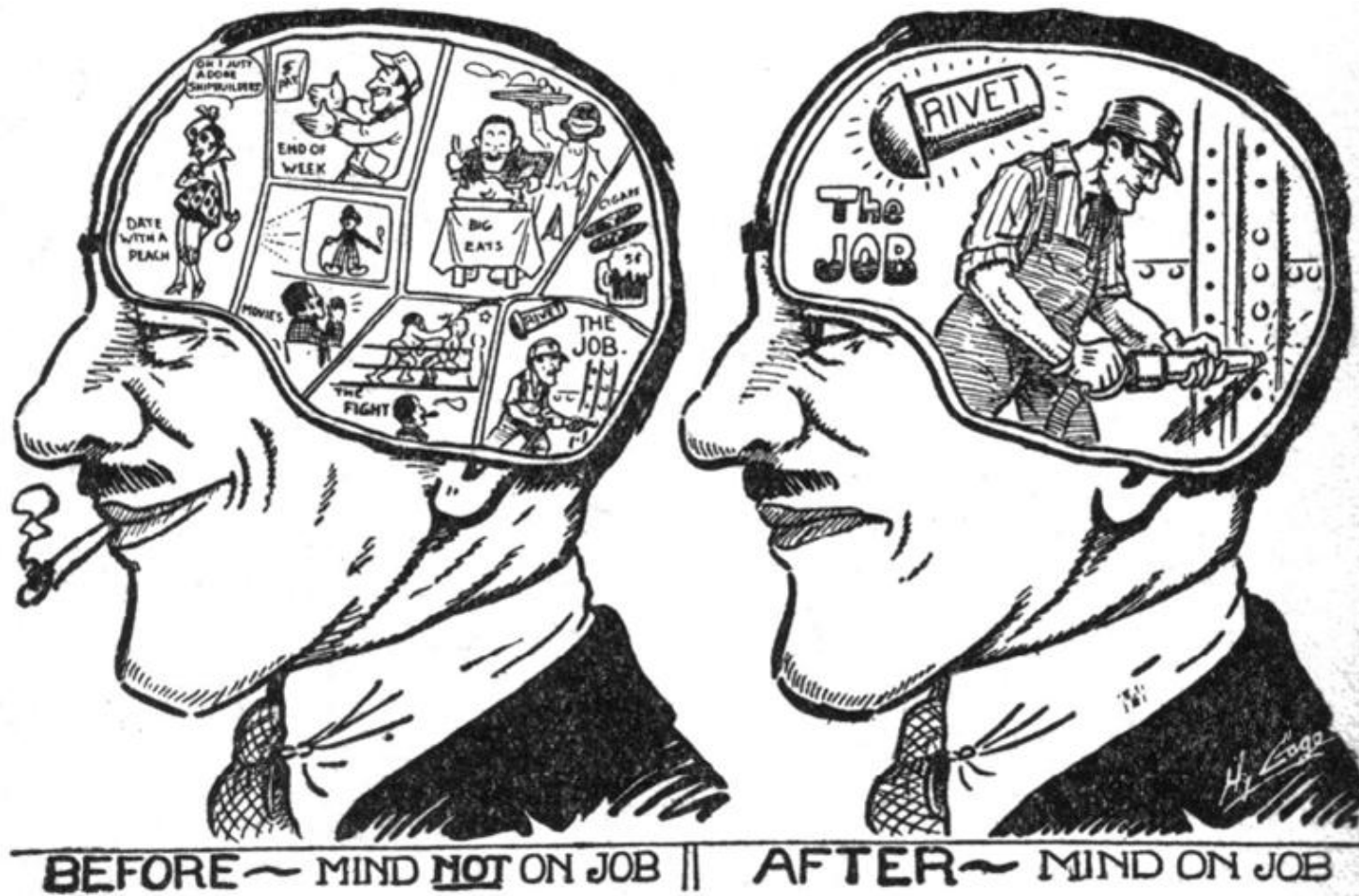
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- Osnovni princip TWI je stvaranje “multiplikativnog efekta”: razviti standardni model, a zatim obučiti ljude koji će obučiti druge ljude da koriste ovaj model;
 - Bilo je neophodno obezbediti visok kvalitet obuke;
 - Treneri su imali aktivan status samo ako održali kurs u prethodnih 90 dana;
 - “RADI PO OVOM UPUTSTVU, NEMOJ VEROVATI PAMĆENJU”
 - Učenje primenom (learning by doing).
-

Trening unutar industrije (4)

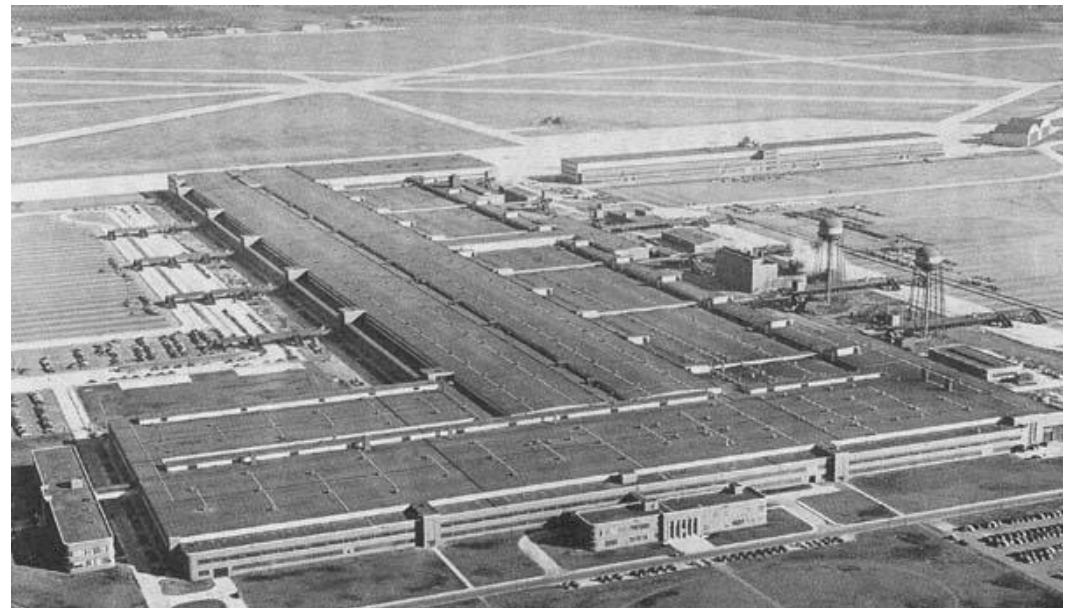
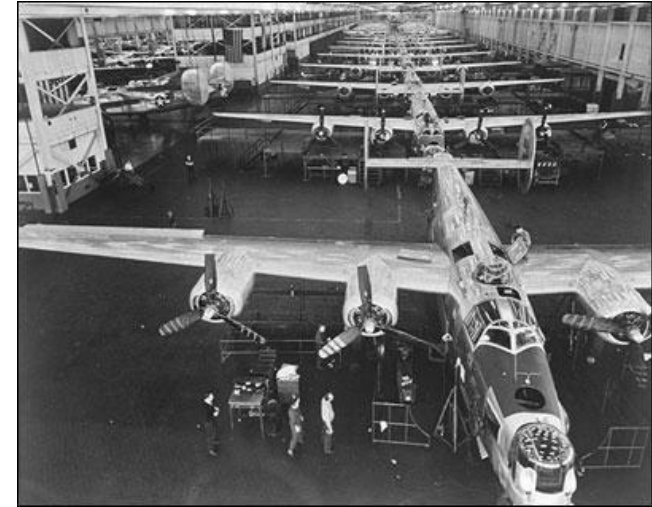
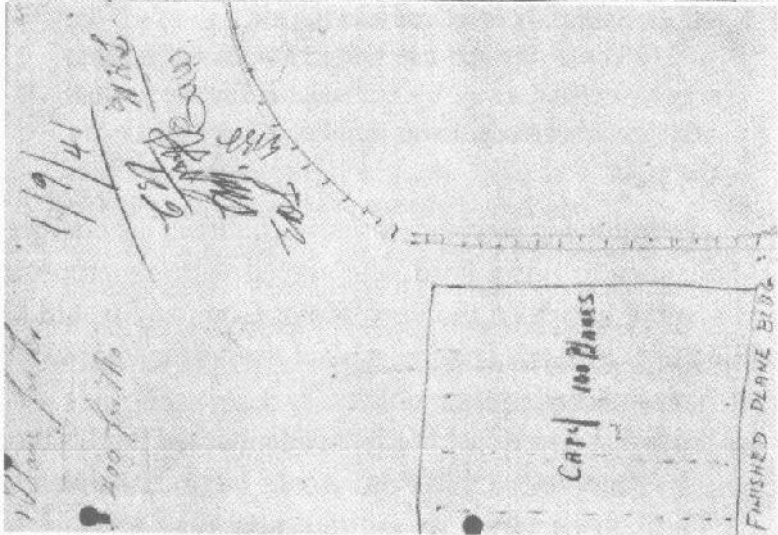
- TWI je obezbeđivao tri standardizovana programa obuke za upravnike i poslovođe:
 - Trening za radnu obuku (Job Instruction Training – JIT) uči upravnike i poslovođe značaju odgovarajuće obuke njihovih radnika i načinu da je postignu;
 - Trening za metode rada (Job Methods Training –JMT) je usmeren na to kako da se stvore i sprovedu ideje za poboljšanje metoda (osnova za kasniji razvoj Kaizena);
 - Trening o radnim odnosima (Job Relations Training – JRT) se bavi odnosima poslovođa i radnika sa rukovodstvom i rešavanjem problema i konflikata.
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- (jedan od četrdeset zaposlenih je završio neki)

Trening unutar industrije (1940 - 1945)

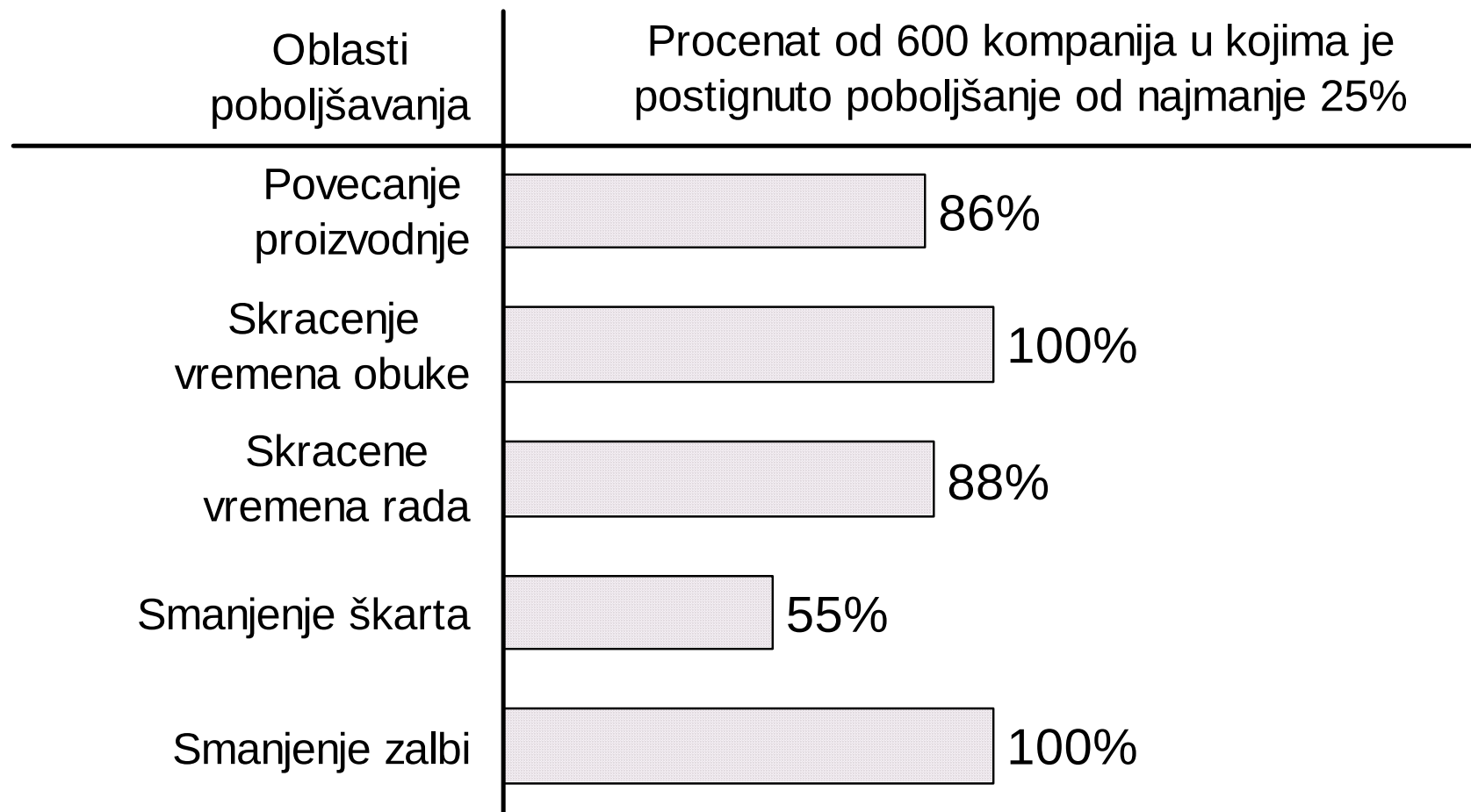


Willow Run / TWI





Efekti TWI programa (1945. godina)



Obuka:

Steps	Function	Description
1	Preparation	To make the learner think about certain things to aid him in comprehending the new thing to be taught.
2	Presentation	To add the new idea to those already in the learner's mind.
3	Application	To train the learner in actually applying what was presented to them in the preceding step and to check the degree which it was learned.
4	Testing	To inspect the result of the teaching by testing the ability of the learner to do the new idea alone.

Charles Allen- Metod obuke 4 koraka

Koraci	Namena	Opis
1	Priprema	Podsticanje učenika da razmišlja o poznatim znanjima u cilju razumevanja novih saznanja koja će mu se predavati.
2	Prezentacija	Dodavanje novih ideja onim koje već postoje u svesti učenika.
3	Aplikacija	Obučavanje učenika kroz praktičnu primenu onoga što im je prezentovano u prethodnom koraku i provera stepena usvojenosti znanja.
4	Testiranje	Proveravanje rezultata obuke testiranjem sposobnosti učenika u samostalnom sprovođenju ideje.

Allen-ov metod 4 koraka

TWI Job Instruction Card

HOW TO GET READY TO INSTRUCT

- Have a Time Table—**
how much skill you expect him to have, by what date.
- Break Down the Job—**
list important steps.
pick out the key points. (Safety is always a key point.)
- Have Everything Ready—**
the right equipment, materials, and supplies.
- Have the Workplace Properly Arranged—**
just as the worker will be expected to keep it.

Job Instruction Training

TRAINING WITHIN INDUSTRY

Bureau of Training
War Manpower Commission

KEEP THIS CARD HANDY

GPO 16-35140-1

Front Job Instruction Card

HOW TO INSTRUCT

Step 1—Prepare the Worker

- Put him at ease.
- State the job and find out what he already knows about it.
- Get him interested in learning job.
- Place in correct position.

Step 2—Present the Operation

- Tell, show, and illustrate one IMPORTANT STEP at a time.
- Stress each KEY POINT.
- Instruct clearly, completely, and patiently, but no more than he can master.

Step 3—Try Out Performance

- Have him do the job—correct errors.
- Have him explain each KEY POINT to you as he does the job again.
- Make sure he understands.
- Continue until YOU know HE knows.

Step 4—Follow Up

- Put him on his own. Designate to whom he goes for help.
- Check frequently. Encourage questions.
- Taper off extra coaching and close follow-up.

16-35140-1

**If Worker Hasn't Learned,
the Instructor Hasn't Taught**

Back Job Instruction Card

Source: War Production Board, Bureau of Training, Training Within Industry Service, 1944, *Job Instruction: Sessions Outline and Reference Material* (Washington D.C.: U.S. Government Printing Office), inside back cover.

Trening radne obuke

KAKO SE PRIPREMITI ZA OBUČAVANJE

1) Pripremiti program i raspored obuke

- Koje veštine, koji obim i do kada se očekuje da polaznik stekne

2) Razložiti posao

- Napraviti spisak **važnih koraka** u obavljanju posla
- Prepoznati sve **ključne tačke** (bezbednost je uvek ključna tačka)

3) Obezbediti sve resurse potrebne za obuku i rad

- Prava oprema, materijal, zalihe

4) Pravilno urediti radno mesto

- Urediti radno mesto na način na koji se očekuje da će ga radnik održavati

Job Instruction Training
Training within industry

Držati ovu karticu uvek pri ruci

Prednja strana kartice

KAKO OBUČAVATI

Korak 1 –Pripremiti radnika za obuku

- Opustiti radnika i zainteresovati ga za obuku.
- Opisati posao i saznati šta radnik već zna o tom poslu
- Zainteresovati radnika da nauči taj posao
- Postaviti radnika u odgovarajuće okruženje i položaj

Korak 2 – Upoznati radnika sa operacijama

- Reći, pokazati i ilustrovati jedan po jedan VAŽAN KORAK
- Naglasiti i objasniti svaku pojedinačnu KLJUČNU TAČKU
- Davati uputstva jasno, potpuno i sa strpljenjem, ali ne više nego što radnik može da savlada

Korak 3 – Isprobati naučeni način rada

- Pustiti radnika da samostalno uradi posao - pa otkloniti greške
- Tražiti od radnika da objasni KLJUČNE TAČKE iz svog ugla i da onda ponovo samostalno uradi posao
- Proveriti da li je radnik razumeo i savladao metod
- Nastaviti obuku dok se trener ne uveri da radnik zna

Korak 4 – Pratiti primenu naučenog

- Pustiti radnika da samostalno radi
- Odrediti kome da se obrati za potrebnu pomoć
- Često proveravati radnika
- Podsticati radnika da postavlja pitanja
- Postepeno smanjivati dodatnu obuku i završavati praćenje

**Ako radnik nije naučio,
znači da ga instruktor nije podučio**

Zadnja strana kartice

Trening za radnu obuku (2)

- Napraviti spisak **važnih koraka** (šta da se radi):
 - Važni koraci koji čine da posao napreduje;
 - Dovoljno mali da mogu da se “progutaju u jednom zalogaju”;
 - Idealno bi bilo da svaki korak sadrži podjednaku količinu posla;
 - Svaki važan korak započeti glagolskim oblikom;
 - Izabrati ključne tačke (kako da se radi):
 - Bezbedonosni faktori;
 - Ključne stvari za uspeh, odnosno neuspeh posla;
 - Stvari koje posao čine lakšim;
 - Ako ima više od 5 ključnih tačaka razmotriti deljenje jednog koraka na više njih;
 - Sumirati razloge za ključne tačke (zašto).
-

Trening za radnu obuku (3)

- Pripremiti radnika;
- Pokazati mu proceduru izvršenja posla, nevodeći ključne tačke i razloge za ključne tačke;
- Dozvoliti radniku da sam izvrši posao, uz konstantno praćenje i nadgledanje;
- Kada je instruktor siguran da je radnik u potpunosti razumeo posao, prepustiti radniku da potpuno samostalno nastavi sa izvršenjem posla;

Ako osoba nije dobro naučila, instruktor nije dobro podučio!

Trening za radnu obuku (4)

Karta podele rada

Opis zadatka:				Nabrojte zajedničke/uobičajene ključne smernice:	
Delovi (kratko opisati delove):					
Neophodan alat i materijal:					
Neophodna zaštitna oprema:					
Važni koraci		Ključne smernice		Razlozi	
ŠTA?	Logični segment operacije koji čini da posao napreduje	KAKO?	Štvari u važnim koracima koje mogu: 1. učiniti da posao uspe ili ne 2. povrediti radnika 3. posao učiniti lakšim	ZAŠTO?	Nabrojte razloge ključnih smernica
Podsetnik za ključne tačke:		☐ Kritična provera ili kontrola	☐ Kvantitat. provera	☐ Može povrediti radnika	☐ Čini posao lakšim
Vlasnik dokumenta:		Str:		Rev #:	
		od		Datum:	

Ako osoba nije dobro naučila, instruktor nije dobro podučio!



Namera treninga za metode rada - JMT

Da Vam pomogne da proizvedete veće količine kvalitetnih proizvoda za kraće vreme, koristeći na najbolji način

- ljude,
- mašine i
- materijal

koji su trenutno na raspolaganju.

TWI Job Methods Card

HOW TO IMPROVE

JOB METHODS

A practical plan to help you produce **GREATER QUANTITIES of QUALITY PRODUCTS** in **LESS TIME**, by making the **best use of the Manpower, Machines and Materials**, now available.

STEP I—BREAK DOWN the job.

1. List all details of the job **exactly** as done by the **Present Method**.
2. Be sure details include all:—
 - Material Handling.
 - Machine Work.
 - Hand Work.

STEP II—QUESTION every detail.

1. Use these types of questions:
 - WHY is it necessary?
 - WHAT is its purpose?
 - WHERE should it be done?
 - WHEN should it be done?
 - WHO is best qualified to do it?
 - HOW is the 'best way' to do it?
2. Also question the:
 - Materials, Machines, Equipment,
 - Tools, Product Design, Layout,
 - Work-place, Safety, Housekeeping.

16—31488-1

Front Job Methods Card

STEP III—DEVELOP the new method.

1. **ELIMINATE unnecessary details.**
2. **COMBINE details** when practical.
3. **REARRANGE** for better sequence.
4. **SIMPLIFY all necessary details:—**
 - Make the work **easier and safer**.
 - **Pre-position** materials, tools and equipment at the best places in the **proper work area**.
 - Use **gravity-feed** hoppers and **drop-delivery** chutes.
 - Let **both hands** do **useful work**.
 - Use **jigs and fixtures** instead of hands, for holding work.
5. **Work out your idea with others.**
6. Write up your proposed new method.

STEP IV—APPLY the new method.

1. **Sell your proposal to the boss.**
2. **Sell the new method to the operators.**
3. Get final approval of all concerned on **Safety, Quality, Quantity, Cost.**
4. Put the new method to work. Use it until a **better** way is developed.
5. Give **credit** where credit is due.

JOB METHODS TRAINING PROGRAM

TRAINING WITHIN INDUSTRY SERVICE
BUREAU OF TRAINING
WAR MANPOWER COMMISSION

GPO 16—31488

Back Job Methods Card

Source: War Production Board, Bureau of Training, Training Within Industry Service, 1943, *Job Methods: Sessions Outline and Reference Material* (Washington D.C.: U.S. Government Printing Office), inside back cover. Replicated from best available source.

Trening metoda rada

KAKO UNAPREDITI METODE RADA

Praktičan plan koji treba da Vam pomogne da proizvedete
VEĆE KOLIČINE KVALITETNIH PROIZVODA za KRAĆE
VREME, koristeći na **najbolji način**
ljude, mašine i materijale kojima raspolazete.

Korak 1 – **RAZLOŽITI** rad na elemente

1. Nabrojati sve elemente rada tačno onako kako se izvršavaju po **postojećem metodu**
2. Uveriti se da su obuhvaćeni svi elementi rada:
 - rukovanja materijalom
 - mašinski rad
 - rad radnika

*"Zapišite sve onako kako ste videli
a ne onako kako ste zapamtili."*

Korak 2 - **ISPITATI** svaki element rada:

1. Koristiti sledeća pitanja :
 - ZAŠTO je to neophodno?
 - ŠTA je svrha toga?
 - GDE bi to trebalo raditi?
 - KADA bi to trebalo raditi?
 - KO je najbolje kvalifikovan da to radi?
 - KAKO bi se na "najbolji" način to uradilo?
2. Tokom ispitivanja takođe razmotriti:
materijale, mašine, opremu, alate, konstrukciju
proizvoda, raspored, radno mesto, uslove rada,
bezbednost, održavanje.

"Zapišite svaku ideju."

Prednja strana kartice

Korak 3 – **RAZVITI** nov metod

1. **ELIMINISATI** nepotrebne detalja
2. **KOMBINOVATI** detalje kada je to praktično
3. **PREMESTITI** elemente radi boljeg redosleda
4. **POJEDNOSTAVITI** sve **neophodne** detalje:
 - **Unapred postaviti** materijale, alate i opremu u najbolji položaj na radnom mestu
 - Koristiti odgovarajuće gravitacione dodavače i kolica
 - Omogućiti da se korisan rad obavlja sa obe ruke
 - Koristiti držače i stege umesto ruku za držanje predmeta rada
5. **Razraditi** sopstvene ideje **sa ostalima.**
6. **Zapisati** predlog za **novi metod.**

"Učiniti rad lakšim i bezbednijim"

Korak 4 – **PRIMENITI** novi metod

1. **Prezentovati** svoj predlog **šefu**
2. **Prezentovati** novi metod rada **radnicima**
3. **Obezbediti** konačna **odobrenja** koja se tiču **bezbednosti, kvaliteta, količine i cene**
4. **Primeniti** nov metod. Koristiti ga dok se razvije bolji.
5. Odati **priznanje** za svaki predlog koji to zaslužuje.

"Nastaviti dok se ne pronađe bolji metod"

**JOB METHODS PROGRAM
TRAINING WITHIN INDUSTRY**

Zadnja strana kartice

Trening za metode rada (3)

- podeliti posao na osnovne operacije od kojih se sastoji, transporte, kontrole i čekanja;
- ispitati svaki detalj (zašto? što? gde? kada? ko? kako?);
- razviti novi metod eliminisanjem, kombinovanjem, premeštanjem i pojednostavljenjem svih neophodnih detalja;
- primeniti novi metod "prodajući" ga svakome.

Zapamtite da bolji način uvek postoji. Nastavite da tražite dalja
poboljšanja!

Nakon rata TWI program je prenet u Japan

1945 JMT card (front)

**HOW TO IMPROVE
JOB METHODS**

A practical plan to help you produce
GREATER QUANTITIES of QUAL-
ITY PRODUCTS in LESS TIME, by
making the best use of the Manpower,
Machines and Materials, now available.

STEP I—BREAK DOWN the job.

1. List all details of the job exactly
as done by the Present Method.
2. Be sure details include all:
—Material Handling.
—Machine Work.
—Hand Work.

*"Write it as you see it
Not as you remember it."*

STEP II—QUESTION every detail.

1. Use these types of questions:
WHY is it necessary?
WHAT is its purpose?
WHERE should it be done?
WHEN should it be done?
WHO is best qualified to do it?
HOW is the "best way" to do
it?
2. While questioning consider:—
Materials, Machines, Equip-
ment, Tools, Product Design,
Layout, Work-place, Safety,
Housekeeping.

"Write down each idea."

1945 JMT card (back)

STEP III—DEVELOP the new method.

1. ELIMINATE unnecessary details.
2. COMBINE details when practical.
3. REARRANGE for better se-
quence.
4. SIMPLIFY all necessary details:
—Pre-position materials, tools and
equipment at the best places in
the proper work area.
—Use gravity-feed hoppers and
drop-delivery chutes.
—Let both hands do useful work.
—Use jigs and fixtures instead of
hands for holding work.
5. Work out your idea with others.
6. Write up your proposed new meth-
od.

"Make the work easier and safer."

STEP IV—APPLY the new method.

1. Sell your proposal to your "boss."
2. Sell the new method to the op-
erators
3. Get final approval of all concerned
on Safety, Quality, Quantity, Cost.
4. Put the new method to work. Use
it until a better way is developed.
5. Give credit where credit is due.

"Continue until a better way is found."

**JOB METHODS PROGRAM
TRAINING WITHIN INDUSTRY, INC.**
14600 DETROIT AVE. CLEVELAND 7, OHIO

1992 JM card (front)

(JM資料1)

改善の仕方

現在の労力、機械および材料を最も有効
に使うことによって、短時間で、よい品質
のものを多量に生産するのに役立つ実際
的方法

第1段階——作業を分解する

1. 現在方法をそのまま、作業の全順
目を記録する
2. 一連動作業
—機械作業
—手作業
は全部細目になる

第2段階——細目ごとに自問する

1. 次の自問をする
なぜそれは必要か？
その目的はなにか？
どこでするのがよいか？
いつするのがよいか？
だれが最も適しているか？
どんな方法がよいか？
2. 同時に次に自問する
材料、機械、設備、道具、設計、
配置、動作、安全、整理整頓

1992 JM card (back)

第3段階——新方法に展開する

1. 不要な細目を取り去る
2. できるなら細目を結合する
3. 細目をよい順序に組み替える
4. 必要な細目を簡単にする
作業をもっと楽に安全にするために
—材料、道具および設備を適当な
動作範囲の最もよい位置に置く
—重労働の補助装置や、落下逃
出装置を用いる
—両手を有効に用いる
—手で支えるかわりに道具や、取
付具を利用する
5. 他人の方も借りて考える
6. 新方法の細目を記録する

第4段階——新方法を実施する

1. 新方法を上司に納得させる
2. 新方法を部下に納得させる
3. 安全、品質、生産量、原価の関係
者に最後の承認を求める
4. 新方法を仕事に務める。次の改善が
できるまで用いる
5. 他人の功績は認める

労働省職業能力開発局
(不許複製)

TWI u Japanu (1945 - ...)

- Primenjen u uslovima kada je proizvodnja bila 10 puta manja od proizvodnje iz 1937. god.
- Više od 10 miliona ljudi prošlo je obuku.
- Ministarstvo za rad izdaje licence instruktorima i kontroliše standarde obuke.
- Predstavlja osnovu za kaizen

JRT

TWI Job Relations Card

JOB RELATIONS

***A Supervisor Gets Results
through People***

FOUNDATION FOR GOOD RELATIONS

Let each worker know how he is getting along.
Figure out what you expect from him.
Point out ways to improve.

Give credit when due.
Look for extra or unusual performance.
Tell him while "it's hot."

*Tell people in advance about changes that
will affect them.*

Tell them WHY if possible.
Get them to accept the change.

Make best use of each person's ability.
Look for ability not now being used.
Never stand in a man's way.

***People Must Be Treated As
Individuals***

How to Handle a Job Relations Problem

DETERMINE OBJECTIVE

1. GET THE FACTS.
Review the record.
Find out what rules and plant customs apply.
Talk with individuals concerned.
Get opinions and feelings

Be sure to have the whole story.

2. WEIGH AND DECIDE.
Fit the facts together.
Consider their bearing on each other.
What possible actions are there?
Check practices and policies
Consider objective and effect on individual,
group, and production.

Don't jump at conclusions.

3. TAKE ACTION.
Are you going to handle this yourself?
Do you need help in handling?
Should you refer this to your supervisor?
Watch the timing of your actions.

Don't pass the buck.

4. CHECK RESULTS.
How soon will you follow up?
How often will you need to check?
Watch for changes in output, attitudes, and
relationships.

Did your action help production?

Front and Back of the Job Relations Card

Source: Adapted from Bird McCord, "Job Instruction," Robert L. Craig (ed.), 1976, *The Training and Development Handbook — A Guide to Human Resource Development*, 2nd ed. (New York: McGraw-Hill), p. 32-22.

Trening radnih odnosa

RADNI ODNOSI

Nadzornik dobija rezultate kroz ljude

TEMELJ DOBRIH ODNOSA

1) Objasniti radniku kako može da napreduje

- Objasniti radniku šta se očekuje od njega
- Objasniti načine poboljšavanja

2) Nagraditi po zaslugama

- Napraviti izuzetan ili neočekivan učinak u obavljanju posla
- Obavestiti i nagraditi radnika što pre (dok je "vruće")

3) Upoznajte unapred ljude sa promenama koje utiču na njih

- Objasniti radnicima zašto se vrši promena, ako je moguće
- Pomoći radnicima da prihvate promenu

4) Najbolje iskoristiti sposobnosti svake osobe

- Prepoznati sposobnosti koje se trenutno ne koriste
- Ne ograničavati zaposlene (ne stajati im na putu)

Ljudi se moraju tretirati kao individue

Prednja strana kartice

Kako rešiti probleme odnosa na radu

ODREDITI CILJEVE

1) Sagledati činjenice

- Pregledati arhivu
- Saznati koja pravila i običaji fabrike se primenjuju
- Razgovarati sa zaposlenima
- Saznati mišljenja, stavove i osećanja zaposlenih

Osigurati da se sagleda cela priča

2) Proceniti i odlučiti

- Povezati činjenice zajedno
- Razmotriti njihov međusobni odnos
- Ispitati koje su moguće akcije
- Proveriti postojeću praksu i politiku
- Razmotriti ciljeve i uticaj na individue, grupe i proizvodnju

Ne žuriti sa zaključcima

3) Preduzeti akciju

- Da li ćeš ovo sam završiti?
- Da li ti je potrebna pomoć?
- Da li ćeš se obratiti svom rukovodiocu?
- Razmotriti termin i trajanje tvoje akcije

Ne svaljuj odgovornost na druge

4) Proveriti rezultate

- Još koliko dugo ćeš pratiti situaciju?
- Koliko često ćeš je morati proveravati?
- Posmatraj promene u izlazu, stavovima i odnosima

Ispitati da li je akcija pomogla proizvodnji

Zadnja strana kartice

Trening o radnim odnosima (2)

25 / 17

- Kako se efikasno baviti zaposlenima uz fer odnos;
 - “Ljudi se moraju tretirati kao individue!”
 - Kako rešiti problem?
 - Prikupiti činjenice!
 - Analizirati činjenice i doneti odluku!
 - Preduzeti akcije!
 - Proveriti rezultate!
 - Pohvaliti zaposlenog kada za to ima razloga!
 - Na najbolji način iskoristiti mogućnosti svakog zaposlenog.
-

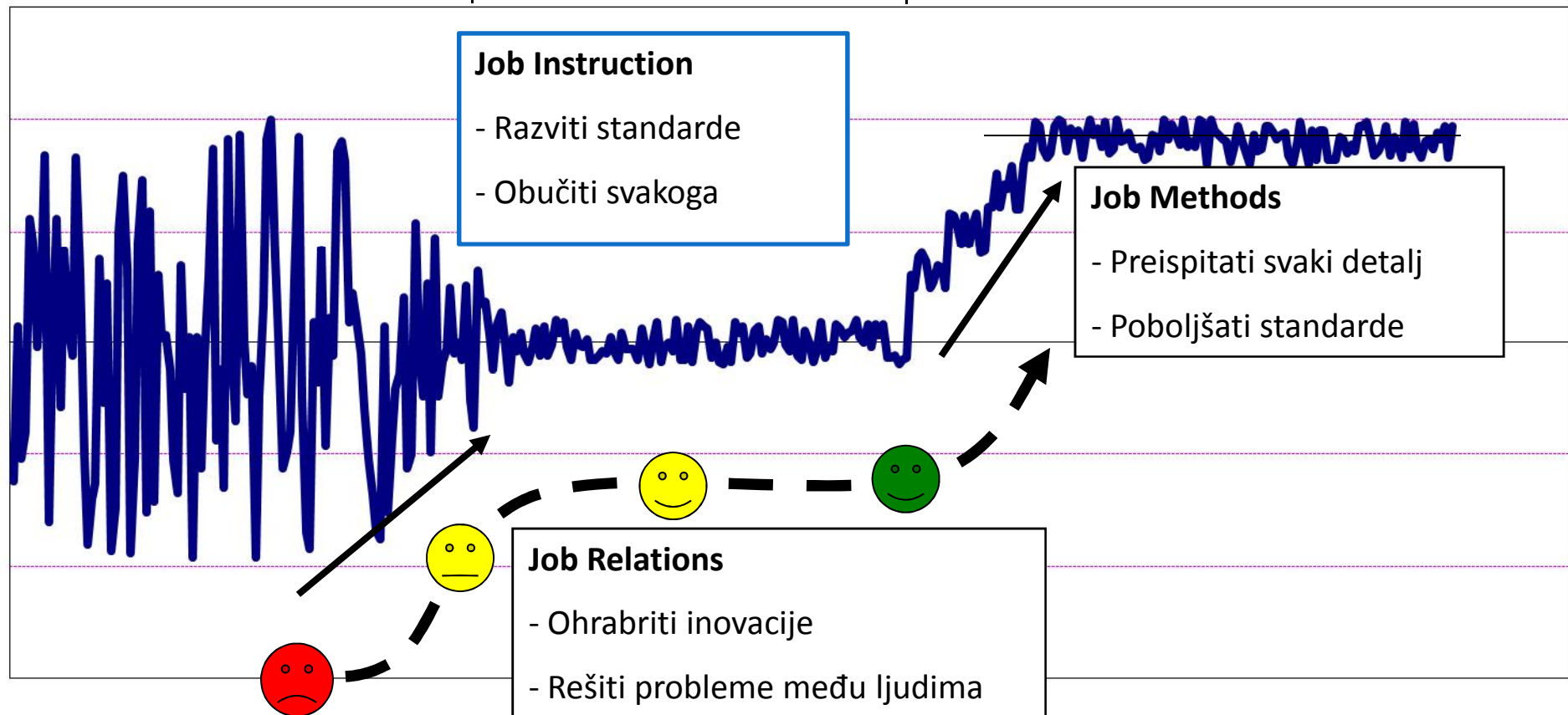
Trening unutar industrije (4)

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Varijacije uzrokuju
nestabilnost procesa

Smanjiti varijacije
standardnim radom

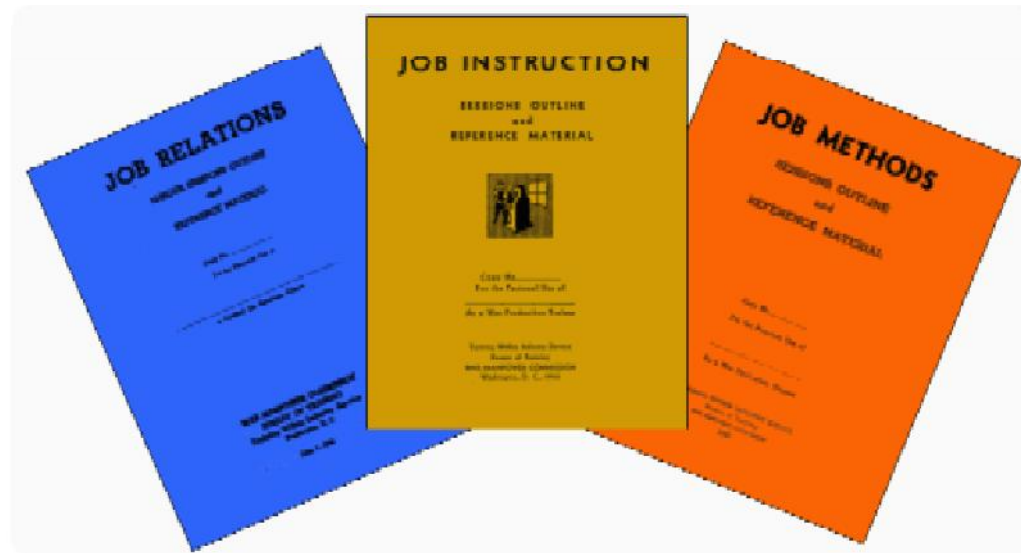
Raditi na unapređenjima iz
stabilne osnove





Trening unutar industrije (TWI)

Karta podele rada



Karta podele rada – primer 1

Job Breakdown Sheet

Description of the task:		How to scoop ice cream		List Common Key Points:	
Parts (UPN, describe the parts):		Ice cream stored at 8°F in parlor cooler		Ice cream should be stored at -10F to -20F prior to use in the parlor. Parlor freezer should always be set to 8°F.	
Tools & supplies required:		Dipper (ice cream scoop) staged in pan of water			
Safety equipment required:		Coffee, to offset ice cream headache			
Important Steps		Key Points		Reasons	
WHAT?	A Logical segment of the operation that advances the work.	HOW?	Things in important steps that will: 1. make or break the job 2. injure the worker 3. make the work easier	WHY?	List the reasons for the key points
1	Scoop ice cream	1) Tap dipper lightly to remove water 2) Start on outside wall 3) Roll, don't dig	☐ ☒ ☐	1) Nobody wants water in there ice cream. 2) If start on inside, you dig and can't get nice round scoops. 3) Rolling makes the dipperfuls round.	Training Aid: (put hand sketches, diagrams, parts, or layouts here. Insert a digital picture if available.)
2	Put dipperful in the cone	n/a			
3	Scoop again (if desired) OR Put lid back on tub.	1) Dip scoop in water 2) Tap off excess lightly 3) Start next scoop where last one left off	☒ ☐ ☒	1) Light coating of water helps the ice cream roll in the scoop, prevents sticking to the scoop. 2) Nobody wants water in there ice cream. 3) Promotes good rolling technique, discourages digging from the middle.	
Key Point reminders: ☐ Critical check or inspection		☐ Quantity Check	☒ Could injure the person	☒ Makes the job easier	Owner of this document: Chief Soda Jerk
					Page: 1 of 1 Rev: Date: 5/15/07

"If the person hasn't learned, the instructor hasn't taught."

Karta podele rada – primer 2

Job Breakdown Sheet

Description of the task:		How to bump a volleyball.				List Common Key Points:		
Parts (UPN, describe the parts)		One volleyball				Body position is the most important key.		
Tools & supplies required:		None						
Safety equipment required:		None						
Important Steps		Key Points		Reasons		Training Aid: (put hand sketches, diagrams, parts, or layouts here. Insert a digital picture if available.) 		
WHAT?	A Logical segment of the operation that advances the work.	HOW?	Things in important steps that will:	WHY?	List the reasons for the key points			
			1. make or break the job 2. injure the worker 3. make the work easier					
1	Hand position	1. Both hands palm up 2. Place one hand in top of the other 3. Curve hands and put thumbs together	☐ ☒ ☐	1. Hit ball on top of arms 2. Locks the hands together so they don't spread apart				
2	Arm position	1. Arms straight and lock elbows 2. Hands lined up with bellybutton 3. Hand out from bellybutton about 1 foot 4. Tap off excess lightly	☐ ☒ ☒	1. Makes a flat surface on arm for better control 2. Easy to pass ball forward 3. Keep you body bent forward and arms out front.				
3	Leg position	1. Stand feet apart shoulder-width 2. Squat to bend knees	☒ ☒	1. Stronger body position and balanced 2. Move quick and balanced				
4	Bump (pass) the volleyball	1. Watch the ball 2. Move body and arms to line up with ball 3. Move arms out 4-5 inches from body 4. Bump or make contact with ball on both lower arm	☐ ☒ ☒ ☐	1. See where the ball is going 2. Hit the ball ion the right place on the arms 3. Make ball bump in right direction 4. Even surface for ball to bump off				
Key Point reminders:		☐ Critical check or inspection	☐ Quantity Check	☒ Could injure the person	☒ Makes the job easier	Owner of this document: Alisha Odle Page: 1 of 1 Rev: Date: 5/18/09		

"If the person hasn't learned, the instructor hasn't taught."

Opis:	Sklapanje majice	
Delovi:		
Alati i materijali:	Jedna majica (poželjno oprana)	
Važan korak (ŠTA) Važni koraci koji čine da posao napreduje	Ključne tačke (KAKO) Bilo šta u koraku što može da: 1. Učine da posao uspe ili ne 2. Povredi radnika 3. Učini posao lakšim	Razlozi (ZAŠTO) Razlozi za ključne tačke
1. Položi ravno	okrenuto na gore, od vrha na desno	stalna polazna tačka
2. Zahvati vrh	- desna ruka, na pola puta između kragne i poruba - kroz oba sloja - leva ruka, pravi vertikalni nabor	- odgovarajuće poravnanje - drži majicu istovremeno - vizuelna pomoć
3. Zahvati sredinu	leva ruka, na pola puta na dole duž vertikalnog nabora	odgovarajuće poravnanje
4. Zahvati dno	desnom rukom preko leve, dno vertikalnog nabora	odgovarajuće poravnanje
5. Raskrsti ruke	držeći, protresti	uklanja nabore
6. Spustiti i preklopiti	- licem na dole - preko izvučenog rukava	- omogućava završni preklop - završava sklapanje

Reference

Knjige

- Patrick Graup and Robert Wrona (2006) The TWI Workbook, Productivity Press
 - Walter Dietz and Betty Bevens (1970) Learning by Doing – The Story of Training Within Industry
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Karta podele rada

