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PRE-PRODUCTION MODELS OF STUDENT TRAINING IN IT COMPANIES

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Abstract. IT companies have their own internal training policies to enable a university student to start working in the company. Boundary and mixed models of corporate training process are considered. The conclusion is drawn about the effectiveness of mixed models.

Keywords. IT company, training, traditional model, ideal model, mixed model.

Introduction

Typically, IT companies have their own internal training policies to enable a university student to start working in the company. In general, they offer no more than four levels of training courses:

0. Self paced
1. Basic
2. Intermediate
3. Advanced

The model of the training process is implemented by a series of courses of several levels. Models can be conveniently divided into **boundary** and **mixed** ones. It is possible to distinguish two boundary models, let us call them **traditional** and **ideal**. Mixed (or hybrid) cases are located between these extreme cases, allowing an IT company to find a balance between the acceptable quality of training and the costs of achieving it.

Traditional model

Traditional model comprises three stages. Stage 0 is self-paced. Training candidates learn necessary technologies in an educational institution, in a commercial training center, or by yourself. They receive a test task when registering a training program. Then they have a technical interview with company trainers. If the result is successful, their further path to the company's team can be represented schematically in Figure 1.
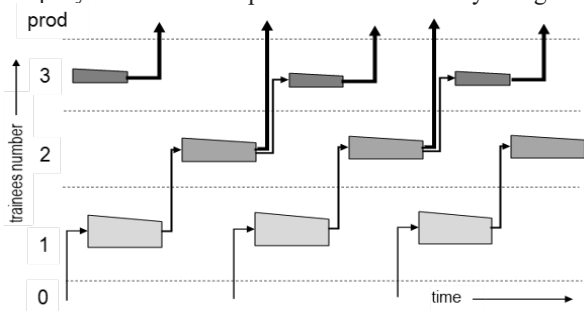

Figure 1 – Trainee path in the traditional model

In this figure, the time axis is shown horizontally. The intervals between individual blocks, as well as the lengths of the blocks themselves, are conditional. The levels of training courses and the relative number of trainees at the entrance and exit of the particular training course are located vertically. Conventionally, the area of the block reflects the volume of the trainer's work. Moreover, a darker block corresponds to larger (direct or indirect) expenses for paying a trainer.

A two-link or three-link arrow means that the transition to the next level is carried out by the entire trainee group. The wider the arrow, the greater the requirements for the trainee to move to the next level and, as a rule, the greater the cost of a company to make a decision.

Stage 1 may be optional and conducted by external trainers. Classes are held offline or online according to the schedule synchronously. The same procedure is at stage 2 but a trainer is a company employee. The last stage is pre-production and implemented by a project team.

Advantage:

– high efficiency on the criterion of the quality of a training course for a junior.

Disadvantages:

– synchronous mode, which leads to **long periods of inactivity** for both the best trainees and the others;

– at the end of the internal training course there is a large pool that goes into production slow;

– low efficiency on criterion of training costs per junior.

Ideal model

A special feature of this model is pure self-paced online format until pre-production stage. A trainee path to the company's team is represented schematically in Figure 2.
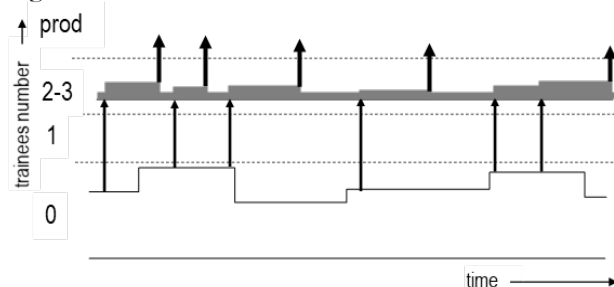

Figure 2 – Trainee path in the ideal model

Figure 2 shows that the model is implemented by training courses of two levels. Both levels have no time boundaries. The legend is the same as in Figure 1. Vertical arrows mean that the transition to a new level occurs individually and independently of other trainees.

Trainees register for an online training course without completing a test task. A course is implemented asynchronously in an online community format with limited support from trainers. At the end depending on the result three options are possible: pre-production, return to stage 1, rejection. When requested from production, the team lead scans the training list of stage 1 and selects the required number of trainees who gets ready for production.

Advantages:

– high efficiency on the criterion of the cost of training for a junior;

– high efficiency if a trainee has: 1) great motivation, 2) sufficient potential for (almost) individual study of the program.

Disadvantages

– the planned volume of activities is not fulfilled in the absence of the two above conditions.

– **low efficiency** according to the criterion of the percentage of those who successfully completed the training program.

– **does not scale well in the regions** due to the small volume of trainees at the entrance of stage 1 and low motivation to relocate to the regions;

– risks of theoretical training with limited coaching participation.

Mixed fragmented model

Prerequisites of this model are the same like in traditional one. But the training course program is divided into modules. An important action at stage 1 is filtering applications. Training candidates receive an entry task for the declared module when registering for the training course. At the end of each module a trainee has an interview with a trainer. Depending on the result he or she goes to stage 1 starting with a declared module, or to some previous stage with the corresponding entry task. For each module, a separate training course is created, which is held synchronously according to the traditional model.
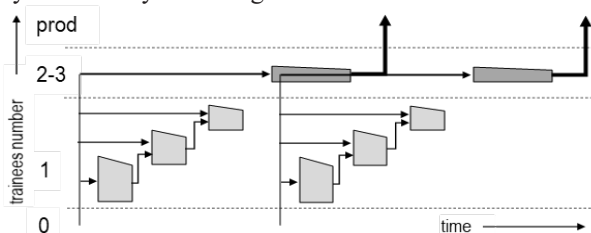

Figure 3 – Trainee path in the mixed fragmented model

Figure 3 shows that training courses of the level 1 are divided into modules. Trainees work in groups. Moreover, it is assumed that a candidate for a training course can even start immediately from a training course of the level 2, although in practice the probability of this event is extremely low. An additional training course of the level 3 can be set if required.

Advantage:

– the workload of a trainer team is optimized by fragmentation of a program and positioning of individual trainees to advanced modules compared to the traditional model.

Disadvantage:

– if the number of trainees positioned for advanced modules is small, then the disadvantages of the traditional model remain.

Mixed community model

A special feature of this model is asynchronous online format until stage 3. All trainees form community that functions as the tool to support a trainee progress.

Each task (both theory and practice) includes 3 steps:

1. formulation and basic recommendations for its solution,

2. once the solution of step 1 is submitted, a guide with advanced recommendations of the solution is shared. The solution of the step 2 is reviewed by a training participant who has already completed this task,

3. the solution of step 2 is reviewed by the trainer.

If there is a request from the production, the team lead scans the training list of stage 2 and selects the required number of trainees to train for production.
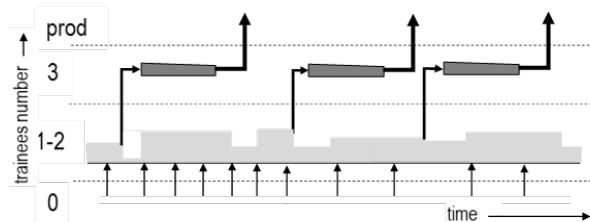

Figure 4 – Trainee path in the mixed community model

Figure 4 shows that this model is implemented by two types of training courses. The lower level is provided by a continuous training course, and the upper level is provided in the traditional format by a trainer.

Advantages:

– this mix model is a **balance**, a trade-off between a low-cost, but often insufficiently effective ideal model and an efficient, but highly costly traditional model,

– due to the asynchronous format there is no downtime between training stages and associated risks (first of all, some trainee leaving for other companies).

Disadvantages:

– risks of conducting course with limited trainer participation at stage 1,

– at stage 2 it is necessary to monitor the balance of interests for the company and a trainee, because there is a high risk that actually pre-juniors would leave the company training process if there are not enough requests from production for mentoring.

Conclusion

The ideal model is low costly, but often ineffective, whereas traditional model is efficient, but relatively expensive. Mixed models allow to achieve a trade-off between these boundary models.

ДОПРОИЗВОДСТВЕННЫЕ МОДЕЛИ ОБУЧЕНИЯ СТУДЕНТОВ В IT-КОМПАНИЯХ

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Аннотация. ИТ-компании имеют собственную внутреннюю политику обучения, позволяющую студенту университета начать работать в компании. Рассмотрены граничные и смешанные модели процесса корпоративного обучения. Делается вывод об эффективности смешанных моделей.

Ключевые слова. ИТ-компания, обучение, традиционная модель, идеальная модель, смешанная модель.