

HOW FAR HAS " TIME -SPENT- ON-THE-TASK" BY PUPILS AND TEACHERS PROVED TO BE CRUCIAL VARIABLE IN CLASSROOM RESEARCH?

Abstract

The question which arises nowadays; is whether the variable " time spent on the task " can be really considered as crucial in the teacher ' s and pupil' s lives in the classroom.

The study also shows that this variable can be used by teacher as an efficient tool to control pupil' s performance on a particular task.

But the most important issue in this study is that teachers should find a powerful strategy that enable them to place greater control over time that can be spent by pupils in and outside the school, otherwise pupils cannot learn in a more efficient way.

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Introduction

The variable "time- on – task" has become a fundamental dimension in classroom research.

It is for this reason, that (Carroll 1963, Bloom 1974, Block 1974) who were particularly interested in various aspects of mastery learning, have centered their research on this variable, because they thought that the investigation, in school learning, should involve the study of time during which the learner becomes capable of acquiring knowledge.

I- Definition Of" Time-On-Task"

In their opinion, the learning task can be thought of as the time during which the learner spends on a particular task in order to move from a state of ignorance to a state of knowledge and understanding and / or from a state of incapability of performing a particular task to a state of performing it.

ملخص

يسعى هذا البحث إلى الكشف عن أهمية متغير الوقت المستغرق في حياة المعلم والمتعلم أثناء الدرس. ويوضح أن هذا المتغير يمكن أن يستعمل كوسيلة فعالة لمراقبة مجهود المتعلم في أي عمل يقوم به أثناء الدرس.

والنتيجة من خلال هذا البحث هو انه يجب ان يعتمد المعلمون الى استعمال استراتيجية فعالة تمكنهم من القيام بمراقبة فعالة للوقت المستغرق داخل او خارج المؤسسة التربوية.

But, what Carroll precisely means by “time- spent –on- task” Is time that is really spent on the act of learning itself?

He maintained that the true meaning of "time- on – task" is the time during which the person is oriented to the learning of this task and actively engaged with it.

II- The Factors Involved In " Time-On-Task"

He went on to specify that there are certain other factors, which can determine how much time the learner can spend actively engaged in learning.

These factors can be presented under two major headings:

I - Determinants of time needed for learning,

II- Determinants of time needed in learning,

-The first factor, to be dealt with is aptitude: There are two groups of pupils that can be described under this variable. The first group of learners are generally called learners with high aptitude.

In fact, this category of pupils needs only a small amount of time to learn a specific task at school.

In contrast, the second group is called pupils with low aptitude, and it is to this category of pupils that the teacher and other members of the staff at school should devote most of their time.

But in Carroll's viewpoint, aptitude also depends on the amount of prior learning which may be relevant to the task in hand.

-The second factor, to be taken into account by teachers is called "ability to understand instructions": This variable should be dealt with in a more general frame that can take into account the combination of "learner's intelligence" and his "verbal ability".

In effect, the more intelligent the learner is, the more he can use his verbal ability, and the more he can infer the concepts and relationships that are inherent to the material to be learned.

-The third factor, to be taken into account, is "quality of instruction". Carroll (1963) considered this variable as very relevant to any type of study , that is dealing with time spent on learning a task. He put great emphasis on the role of the teacher in this regard, because that one is responsible of preparing the material to be studied and therefore, he should organize it and present it in a way that can help the learner to learn in an efficient manner.

It is for this reason that in all our schools the teacher should be the first to be sure that the learner sees and hears clearly any type of material that has been instructed to him.

If however, the learner has interpreted the quality of instruction in an ambiguous way, then the teacher should allow him more time to learn the task in question.

Therefore, the amount of time that is needed by the learner is not only in function of aptitude, but also of the quality of instruction.

In effect, any positive change in the quality of instruction might result in a rapid change in the learner’s task itself and hence immense reduction in the amount of time spent on the task.

III- What Time-Spent-On Learning Mean ?

The second big heading to be examined by this article, is " time- spent –on- learning," it includes two major variables: "opportunity" and "perseverance".

Concerning the first variable "opportunity", most schools are required to respond to differences in intellectual and verbal abilities that are inherent to pupils. As for example, they should provide slow learners with more time in order to learn more efficiently.

Unfortunately, the absolute majority of today's Algerian schools ignore totally the differences in aptitude between pupils, and want to lay down the basis for a policy that does not take them onto account.

In fact, Algerian teachers are aiming to provide equal amount of time for all pupils regardless of their intellectual capabilities.

Under circumstances like these, any observer who is monitoring the verbal and physical behaviors of all participants in the classroom will definitely notice that slow learners are constantly kept under enormous pressure from the teacher, and only the apter pupils can keep up with his instructions.

Under some other circumstances, the participant observer will notice that the pace of lecturing is kept in favor of slow learners consequently fast learners will find it very hard to encounter the difficulties and problems posed by the course.

And as a result, they find themselves loosing some of their motivation for learning, particularly when they feel that their time is really being wasted.

The second variable, "perseverance", was first used by (Carroll 1963) to indicate that failure to provide the learner with enough time will produce incomplete learning. As for example, the learner who usually requires two hours to complete his learning and he is allowed only one hour, the degree of learning will drop dramatically, and might reach 50 per cent or less of the entire amount of time reserved for that particular task. In Carroll's opinion, the term "perseverance" is used instead of the term persistence or overlearning, which means that the learner should be allowed to learn only during a certain amount of time. If this amount of time has exceeded the required level, this will make the learner spend more time than he really needs to master a particular task. In this situation, he might run the risk of getting bored, and might loose confidence in his ability.

In some other cases however, he might go far toward mastery and finds himself being allowed too much time to master the task, therefore he might overestimate his achievement, and might even terminate his efforts to learn.

In fact, this variable that has been so far examined by Carroll, can also be called perseverance in learning-to-criterion and it is entirely measured in terms of time during which the pupils is actively engaged in learning. There is indeed, another important factor that is linked to this variable, "perseverance in learning", namely motivation or desire to learn.

The reasons that are behind this motivation can be thought of as pleasing, parents, friends, achieving self-confidence and / or avoiding family's disapproval.

In the U.K and other western countries, researchers gave top priority to this variable (time spent on the task), in their continual investigation to classroom activities. As for example, Hilsum and Cane (1971), Bennett (1978) and Galton etal (1980) attempted to widen the scope of the study of the variable time in primary school levels. They base

their studies on the assumption that the more time pupils spend on one particular task the more it increases their achievement levels.

Gibbon and Clark (1982) assessed the influence of the variable " time " on teachers and pupils in eight secondary mathematics classes by using systematic observation during a week of lesson.

On the whole, they discovered four instructional time variables which are as follows:

- Time scheduled,
- Time used,
- Time received,
- Time on task.

- Time scheduled, is composed particularly with certain amount of time reserved type of courses, out of these courses, this certain amount of time could be lost in non-instructional activities.

- Time used, is defined by Gibbon and Clark (1982) as a certain amount of time which is smaller than scheduled time, and which is fully used by pupils while they are attending a course.

- Time received, is the amount of time, which can allow the learner to finish the task at hand, but not all the amount of time is being used on the task.

- Finally, Time on task, is defined as the time received minus the time when pupils are not really engaged with task properly.

Furthermore, after observing eight urban secondary school classrooms, for approximately 2 weeks, Gibbon etal (1982) found out that time which is lost is caused specifically by instructional activities given by teachers, and the major source of attenuation comes particularly from time lost by non-attendance.

Equally, he found that the major loss in achievement comes off-task behaviour in the classroom, which might diminish to a great extent the outcomes of learning in classrooms.

Moreover, Gibbon etal claimed that most of pupils show a high degree of motivation and can work with characteristic and high levels of-on-task behaviours.

Gibbon and his associates found that this type of behaviour cannot be generalized to most of classrooms, even if pupils have shown to be continuously on-task-behaviour because it has been revealed that the outcomes of their learning needed is very low, and this could be due to lack of smooth management by teachers.

But on the whole, the results of this systematic observation indicate that class-on-taskness yields a stable characteristic of a particular combination of teacher, pupils and situation.

Similarly, the same results indicate that schools which are facing very high absence rates, institute individualization in a bid to curb disruption in learning caused by absence.

The analysis of the data of this observation, also, show that the significantly lower levels of on-taskness, which is frequently found in individualized classes are not attributed to individualization alone, but rather they are caused by pre-existing differences in pupils' characteristics which have forced schools to institute individualization.

Gibbon and Clark (1982), also argued that the high levels outcomes of on-taskness behaviour might help the researcher during his examination to classroom activities. For instance, they might help him to get a clear picture on the keep-them-quiet-with-busy-work approach to teaching rather than effective instruction issued to pupils. It is for this reason, that "on-taskness" could be considered as an important variable and a very sufficient condition that might help pupils to learn in a more efficient way, if it is taken very seriously by all concerned parties.

Galton's et al (1982) studies are in general support of Gibbon's (1982) and Carroll's (1963) findings. He and his co-workers agreed that "time-on-task", could be considered as the most important determinant of pupils' progress providing that the content and skills assessed by the test are reflected in the learning tasks that are set.

Galton went even further in his bid to assess the efficiency of the variable time-on-task.

He establishes an analogy between academic learning time and biscuits factory, to explain in more details this analogy. He first describes his biscuits factory, where the foreman is expected neither to slow down the conveyor belt, so that some packers will work below their capacity, nor he has to make the conveyor's belt go too fast so that many packers will make mistakes and consequently most tins have to be returned back for repacking after inspection.

It seems evident, that in situation like this, waste of time and money are the direct consequence of bad management, because what is required from this foreman is to learn perfectly how to control the conveyor's belts, so that all packers can work to capacity and all tins will be packed successfully in the first occasion.

It is understood now that Galton refers to the biscuit factory model, to indicate that with the highly structured curriculum (the biscuits), and direct instruction matched to the level of the pupils' development (the speed of the conveyor's belt).The time pupils spend on this task is one of the best indicators of successful learning (the number of biscuit tins packed correctly).

Borg (1980), does not entirely support the outcomes of this analogy, and argued that the use of academic learning time as a measure on student's success rather than engaged time (I.E the time, the pupils spend on the task) is a better predictor of achievement. He also claimed that learning (which usually takes into account the quality of the task they are learning successfully) is not only a better measure than engaged time, but also a useful basis for making decisions with regard to time allocation and for planning policies, that take into account the domain of teacher education.

IV- The Relationship Between Time-Spent-On-Task And The Oracle Research

But what type of contribution can time-on-task make to the oracle research?

It is worth mentioning here, that the oracle research means an observational data that were collected on the behaviour of both teachers and pupils, in order to study organizational and curricular variables alongside pupils and teacher interaction. To examine, as a result of more control in the classroom is better predictor of pupil's performance.

In fact, by carrying out his research, Galton appears just as if he is contradicting Borg's findings, since he claims that the oracle research tends to use the simpler measure of engaged time rather than academic learning time to estimate the contribution of time-on-task to student's achievement. The point that has been raised by Galton in his research, is that sometimes teachers find it very difficult to use the variable time to assess correctly the degree of performance of pupils, so that, in an appropriate curriculum will be planned in advance.

Jasmin (1981) supports this viewpoint, and argued that teachers who are supposed to be successful, mainly the enquirers and infrequent changers, could be classified in the same category of unsuccessful teachers, if they continue judgment about the performance of their pupils over a wide range of skills without taking into account the variable of "time-on-task".

Other variables are also said to be closely linked to time-on-task and every observer should consider them while he is observing and recording data, otherwise, a great loss of precision will be noted in the final results.

To examine the influence of these variables on time-on-task the researchers suggest that the observer should resort to the use of cluster or factor analysis (Bennett 1979 & Galton 1982).

In fact, by using such statistical procedures, concepts like "direct instruction" and "structured settings" will be fully investigated, and the observer will be able to discover their influence on the variable time-on-task.

This argument has been largely supported by Solomon and Kendall (1979), who claimed that children are poised to do better if they are presented with an orderly account of what they are expected to do.

They also added that time-on-task will be fully used by pupils if terms such as "direct instruction" and "structure" were defined with great clarity and were used properly by teachers.

Some other authors Brophy (1979) Rosenshine (1979) prefer to use "direct instruction" in an academically oriented classrooms where tasks are presented in a calm, orderly, structured manner and in warm and friendly atmosphere.

Not surprisingly, that classrooms that are placed in an adequate environment, which is "controlled, disciplined, academically oriented and supportive", tend to enable pupils to use "time-on-task" to the maximum.

The teacher, who is expected to play a major role in directing classrooms activities, should also take into account different categories of pupils that are present in the classroom, and particularly the way in which these pupils use their time.

V- The Relationship Between Different Categories Of Learners And Time-Spent-On-Task

On the whole, the researchers Galton et al (1982) distinguish four types of pupils:

- The attention seekers,
- The intermittent workers,
- The solitary workers,
- The quietcollaborators.

The analysis of the data, which was derived from the observation of the pupils' behaviour reveal that this group (the attention seekers) is busy with his work, and

spent almost 2/3 of the time trying to get the attention of the teacher for feedback or to discuss with him various issues.

The researchers tend to describe this type of pupils as having more interaction with their teachers than with their peers. In this situation, the teacher is expected to use very specific strategies in order to monitor carefully this type of pupils and to enable them to spend more time on learning and doing useful things rather than talking and wasting time.

The intermittent workers, are another type of pupils who usually seek to avoid teacher's attention. In effect, when the teacher approaches them, they want to show the best of them, but as soon as he turns back they (the pupils) start talking about other topics. The researchers notice that this type of pupils spend almost two third of the time working, and their achievement level is not much lower than other type of pupils.

In this situation, teachers will attempt to focus their attention on whether or not these pupils can increase the amount of time-spent-on-task.

The solitary workers could be considered as the hardest workers of all groups mentioned previously, they are characterized by the infrequency of their instruction with other pupils and the teacher, they spent a high proportion of time on the learning task.

On several occasions, the observer have noticed that this type of pupils are hardly seen interacting with other pupils. They are most of time busy with their work; they spend more than 3 quarters of an hour on just doing one task, which is really the highest proportion of time that has never been noted among other types of groups. This could be explained by the fact that they spend a very short amount of time conversing with their colleagues, they even hope that the teacher will leave them alone doing their work.

They usually get their feedback from listening rather than talking or discussing matters with other participants. This category of pupils might become the most successful person in the entire classroom, because they spend most of their time struggling with their work rather than concentrating on other matters.

The quiet collaborators are another type of pupil who possess some common characteristics with solitary workers. Their interaction with their colleagues and the teacher is very much limited; as soon as the teacher gets away, they immediately follow the style of solitary workers, they also want to be left alone and to spend most of their time concentration on their work, they want to cooperate with others only through doing, not through talking.

Once they finish their work, they spend more time waiting for further instructions from teachers.

The situation in Constantine and London schools:

The same oracle research procedure has been used in a number of primary schools and secondary schools in Constantine.

The behaviour of Algerian and British learners agree and differ on several points. In an Algerian classroom the learner observational data that were collected show that on the whole we have 5 categories of pupils:

- The "parasites": on several occasions the observer have noticed that this category of learners in Constantine schools, tend to listen to what others are debating during the course, without voicing their opinions, or, even trying to participate in that lecture by reading books and achieving their homework. Moreover, when asked about certain

points that concern the lesson, they look very astonished, because they have never heard before these specific issues.

In other words, they want to profit from what others are attempting to achieve. The concept "time-on-task" is not taken seriously in this context, simply because they depend on the huge endeavour shown by other learners during the course, as soon as the hard workers leave the classroom, they just follow them. This cross-cultural characteristic of learning behaviour was not mentioned by Galton (1982) in his research.

The second category of learners is called "the extroverted learners": the observation reveals that this type of learners are probably more talkative than any other group of pupils. They are most of the time cheerful, they want to voice their opinion and their look, just as if they are not concerned with the variable "time-on-task". At all, some times they laugh at the teacher when he shouts at them and most of the marks they have obtained in their controls are below the average.

- The attention seekers are hard workers, they prefer to sit in the first row of the classroom, they are always looking at the teacher, and they don't want to miss any word the teacher utters, they spend a high proportion of their time working in the library. Sometimes they want to converse with their counterparts but this occurs only during a very short time, so time spent on task is not really wasted at all by these learners.

-Concerning the solitary workers, the observation reveals that this category of Constantine learners, differs from the London attention seekers.

Galton's observation reveals that this category of learners don't want to interact with other, but time spent in conversing and exchanging ideas with other pupils is very much reduced because their mind is always preoccupied by mastering a specific task or finishing their homework.

In London, solitary workers spent more than 3 quarters of an hour on just doing one task, but here in Constantine (1), they spend more than one hour reading the material they have received at school. But instead of just reading it, they start rehearsing it for a very long time until they master it. They think that rehearsal is the best strategy they can deploy in order to comprehend the material.

In fact, this category of learner would like to spend a large proportion of time alone either reading or just sitting alone without interacting with other pupils.

In London, the solitary workers obtain probably the best mark and most of the time they are successful in their studies. In Constantine schools, solitary learners are behaving almost in the same way, i.e. they want to be always alone just concentration on the task on hand, it is for this reason that they obtain the best marks and they pass all their exams. And when asked about whether they wish to participate in organized trips they refused, and would like to concentrate more on their homework. Here again "time-on-task", is used by these pupils to the maximum and on the whole no significant difference between Algerian and British solitary workers has been noticed.

(1) I mean by material not necessarily English language only, but any material such as geography, history, French etc...

- The last category of learners is called the intermittent workers, Galton et al (1982) found out that in London schools teachers are always trying to focus their attention on whether or not these pupils can increase the amount of time-spent-on-task.

In Constantine schools however, The oracle procedure reveals that this group of learners do not want to look to the teacher's face when he looks at them, simply to avoid his attention, hoping that he will forget them and he will let them work at their own pace probably because they don't want to be embarrassed by his questions.

But they differ with the London learners in that, they feel very shy when asked about some specific points. When he (the teacher) turns back, they don't keep talking, rather they look around them in order to examine the reactions of other learners just after they have been questioned by the teacher, and in order to avoid this type of situations, the researchers notice that they (Constantine intermittent workers) spend the highest percentage of their time trying to understand what they have learnt at school in order to catch up with other hard workers.

Like in the London situation, Algerian teachers will attempt to focus their attention on whether or not these pupils should increase the amount of time-spent-on-task in order to reach the highest levels of academic achievement.

VI- The Role Of Teaching Style

But how can teaching styles make these types of pupils understand the variable time-on-task?

The analysis of the data I have gathered from classroom observations, indicate that teaching styles have a great influence upon pupil type. As for example, individual monitors whose style is essentially based on one-to-one interaction with pupils might affect to a large extent group collaboration. If they (the individual monitors), persist in following this style, most of pupils will work intermittently, therefore, they will not spend most of their time on learning.

This type of teaching style, therefore should take into account a new type of strategy that can enable intermittent workers to concentrate more of their work and rely more on their own intellectual capabilities rather than on continual teacher's feedback.

The individual monitors like to use this type of style for more than 42.5 per cent of the entire time spent in classroom. They only interact with pupils in group in a very short period of time.

In contrast, group of instructors, as their label suggest, tend to interact with pupils who only work in group. They spend one fifth of the lesson time in this way. But under this type of style, it is recommended that the teacher should also take into account the behaviour of solitary workers who usually fail to interact with other members of the group and sometimes feel that they are entirely under-represented and/or wasting their time in an endless discussion.

The only advantage of this style may appear particularly when attention-seekers vanish in the group, and find it very hard to waste time by trying to seek teacher's attention or discussing futile topics.

Style changers, is another teaching style. It is aiming particularly to increase interaction with almost all types of pupils. It is for this reason, that pupils who are labeled "attention seekers" profit more under this style than under any other type of teaching style that was mentioned previously.

Conclusion

In the end, one should point out that this study has so far indicated that the variable "time-on-task" is very crucial in the study of classroom activities. It can be used by the teacher as an efficient tool to control pupil's performance on a particular task.

It is also through this variable that both teachers and pupils can manage to recognize the behaviour of each other. As for example, the teacher attempts to make rules that govern the time spent by pupils on various tasks and the way they behave accordingly. These latter (pupils) will seek to discover the limits of teacher's tolerance, so that they start learning what is an acceptable behaviour and what is not.

But what is most important in this study, is that teachers should also find out a powerful strategy that enable them to place greater control over time spent by pupils in and outside the classroom.

Some researchers indicate that there are two aspects of time that must be controlled by the teacher: time usage inside the school and the relationship between school time and the external world.

It is for this reason that the variable "time-on-task" could also be used to control the time spent by pupils on a particular task while they are away from school.

This could be carried (for instance) through an organized home-work and reports should come from parents about the activity of their children and the like...

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