

A Report on the First Phase of the Evaluation of DEIS

Summary Report

Susan Weir

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EVALUATION OF DEIS

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Educational Research Centre

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Background

DEIS is the most recent programme aimed at addressing the educational needs of children and young people from disadvantaged communities. DEIS was introduced by the Department of Education and Science (DES) in 2006/2007, and most primary schools, even if they only had very small numbers of pupils from disadvantaged backgrounds, received some additional funding under the programme. However, about 340 urban primary, 340 rural primary, and 200 second level schools that were assessed as having the highest levels of disadvantage were invited to participate in the School Support Programme (SSP) component of DEIS. Under the SSP, existing interventions for schools and school cluster/communities with concentrated levels of educational disadvantage were consolidated (DES, 2005). In the urban dimension of the SSP at primary level, schools were divided into two 'bands' depending on their assessed level of disadvantage. Some supports (e.g., reduced class size) are restricted to schools in Band 1 (about 200 schools) in light of their having greater concentrations of disadvantage than those in Band 2¹. Schools in the rural dimension of the SSP at primary level are not organized into bands, but mostly form clusters in which participating schools were assigned the services of a shared teacher/co-ordinator.

Primary schools were selected for participation in DEIS by means of a nationwide survey in 2005, in which principals were asked to report on the number of pupils in the school from families with a variety of poverty-related socioeconomic characteristics (e.g., unemployment, residence in local authority housing), as well as on some educational variables (e.g., the number of senior pupils scoring at or below the 10th percentile in reading). Data from the survey were then used to rank-order schools in

¹ There is evidence from research in Ireland and elsewhere that the achievement disadvantages associated with poverty are exacerbated when large proportions of pupils in a school are from poor backgrounds (a 'social context' effect) (Coleman, Campbell, Hobson, McPartland, Mood, Weinfeld & York, 1966; Sofroniou, Archer & Weir, 2004; Thrupp, 1999). It would seem appropriate, therefore, from a policy point of view, to target resources at schools in which disadvantage is most concentrated.

terms of level of disadvantage, and that rank order was subsequently used to identify schools for inclusion in DEIS. It is important to note that the choice of variables included in the assessment of disadvantage was guided by the definition of disadvantage in Section 32 (9) of the Education Act, (1998) which refers both to learning outcomes and to social and economic factors (by implication, poverty). While an educational outcome measure was not used directly, the choice of socioeconomic variables for the ranking process was determined by their power *to predict* outcomes on an educational measure.

The implementation of DEIS, and in particular its most intensive element – the SSP – represents a considerable investment of resources. The Educational Research Centre (ERC) was commissioned by the DES to conduct an independent evaluation of the SSP at both primary and second levels. The evaluation began in early 2007, and is attempting to monitor the implementation of the programme and assess its impact on students, families, schools, and communities at primary and post-primary levels. A report on the first phase of the evaluation, of which this document is a summary, has just been completed (Weir & Archer, 2011). It deals only with the evaluation at primary level, and has a particular focus on change in English reading and mathematics in urban SSP schools between 2007 and 2010. As well as summarising the outcomes from the testing, some initial findings on the implementation of the programme, both at the level of the system and at local level, are presented here.

One of the most prominent features of the evaluation is the monitoring of changes in achievement, and other pupil outcomes, over the period 2006/07 to 2009/10. With that in mind, reading and mathematics test data were collected from students in 2nd, 3rd, and 6th class in 120 selected urban schools in May 2007². Students in 2nd, 3rd, 5th and 6th class in the same schools were tested again in May 2010. In the rural dimension of the

² Test data were also collected in participating rural schools, and a report on baseline achievement data in rural schools is available (Weir, Archer, & Millar, 2009). A description of the follow-up achievement data in rural schools will be the subject of a future report.

scheme, reading and mathematics test data were collected from students in 3rd and 6th class in selected rural primary schools in May 2007 and again in 2010.

Initial Findings on Measured Achievement

The outcomes of two main types of comparison are reported here for pupils in urban SSP schools: cross-sectional comparisons and longitudinal comparisons. Some preliminary findings on school-level comparisons, and on cross-sectional comparisons in schools in rural areas, are also reported.

Cross-sectional Comparisons

The first kind of analysis of pupil achievement data is cross-sectional. This involves simple comparisons of the overall average reading score in 2007 with the follow-up overall average score in 2010. This kind of comparison in urban schools revealed overall improvements in average reading and mathematics achievement at all grade levels. The average score achieved by pupils in 2nd, 3rd, and 6th class in DEIS schools in 2010 was significantly higher than the corresponding score three years earlier. These comparisons also revealed that improvements were greatest at lower grade levels, with the largest gains being noted among pupils in 2nd class and the smallest at 6th class (see Tables 1 and 2). In 2007, 2nd class pupils achieved an average of 22.8 out of 40 reading items correct, but in 2010 this had increased to 24.3 items. While this represents a significant increase, it should be noted that it is still well below that of the norm group average for 2nd class of 29 items correct. While the percentage of high achievers in 2nd class remained stable, very low achieving pupils were less common in 2010 than in 2007. The percentage of pupils scoring at or below the 10th percentile in reading decreased by about 6% between 2007 and 2010, and in mathematics the decrease was exactly 5%.

Table 1. The reading achievements (raw score, standard score, and percentages scoring at or above the 90th percentile and at or below the 10th percentile) of pupils in SSP (urban) schools in 2007 and 2010, by grade level.

	2nd	3rd	5th	6th
Year and number of pupils	2007 (N=3,236)	2010 (N=3,467)	2007 (N=4,063)	2010 (N=4,316)
Mean raw score	22.8	24.3	22.1	22.7
Mean standard score	92.4	94.6	90.7	91.6
At or below 10th percentile	22.0%	15.9%	26.4%	23.0%
At or above 90th percentile	2.2%	2.2%	1.6%	1.1%
			-	-
			20.6%	28.0%
				25.6%
			3.3%	2.3%
				2.5%

Note. The Drumcondra Sentence Reading Test (DSRT) contains 40 items at each level of the test. The average standard score of the norm group (the sample of pupils on whom the test was standardised) is set at 100. At Levels 2 and 3, the norm group average raw score is 29, at Level 5 it is 23.5, and at Level 6 it is 24. By definition, 10% of the norm group scores lie at or below the 10th percentile and a further 10% lie at or above the 90th percentile.

Patterns of achievement are similar in the case of mathematics, with significant reductions between 2007 and 2010 in the percentages of pupils with scores at or below the 10th percentile at each grade level (Table 2).

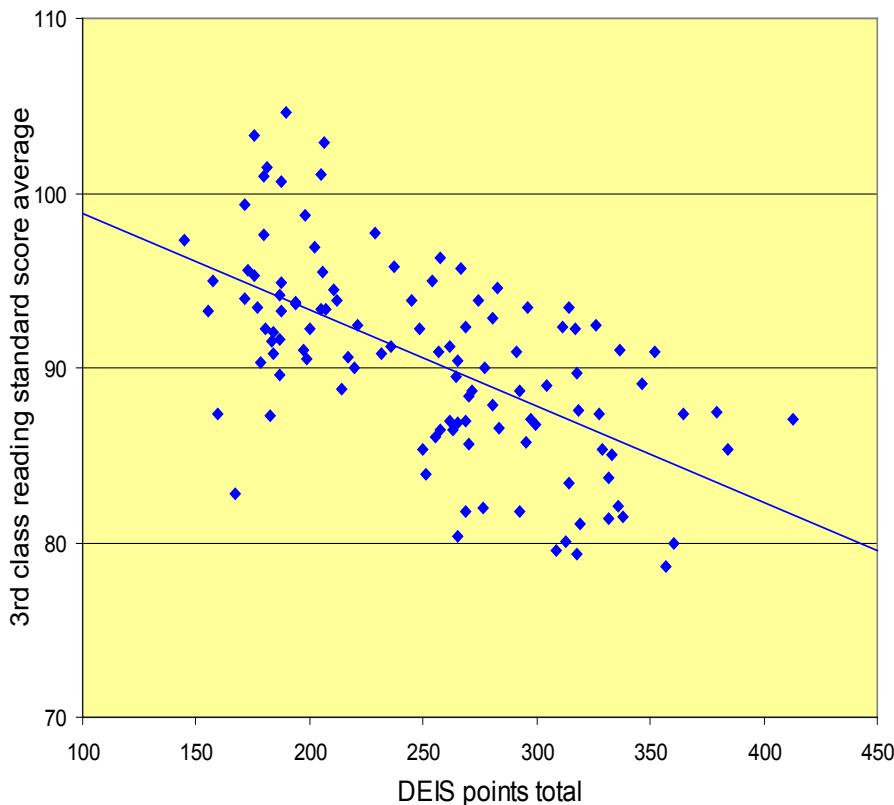
Improvements appear to be more marked among pupils in Band 1 schools than those in Band 2, in that while the average reading and mathematics score of pupils at each grade level increased significantly in Band 1 schools between 2007 and 2010, not all increases among Band 2 pupils over the period were statistically significant. The fact that achievement levels were poorer in Band 1 than in Band 2 schools in 2007 provides some independent evidence for the validity of the methods used to identify schools for DEIS. To pursue this further, the relationship between the assessed level of disadvantage and the average reading score achieved by the 120 schools in the sample was investigated further. To do this, the points achieved by schools in the survey of disadvantage in 2005, and the average reading score achieved by 3rd class pupils in these schools in 2007, were plotted. The outcome, illustrated in Figure 1, shows a strong relationship between the socioeconomic backgrounds of pupils served by the school and aggregated reading scores. The graph shows that, in general, as DEIS points increase (indicating greater levels of assessed disadvantage), average reading achievement decreases.

Table 2. The mathematics achievements (raw score, standard score, and percentages scoring at or above the 90th percentile and at or below the 10th percentile) of pupils in SSP (urban) schools in 2007 and 2010, by grade level.

	2nd	3rd	5th	6th				
Year and number of pupils	2007 (N=3,234)	2010 (N=3,480)	2007 (N=4,056)	2010 (N=4,319)	2007 (N=4,255)	2010 (N=3,908)	2010 (N=4,146)	
Mean raw score	13.8	15.0	11.6	12.2	-	11.7	10.9	11.4
Mean standard score	91.5	93.9	91.1	92.6	-	92.3	89.7	91.2
At or below 10th percentile	21.8%	16.8%	24.1%	21.0%	-	25.1%	31.1%	28.3%
At or above 90th percentile	2.8%	4.5%	5.4%	7.3%	-	4.7%	4.1%	5.5%

Note. The mathematics test contains 30 items at 2nd class level, and 25 items at each of levels 3, 5 and 6. The average standard score of the norm group (the sample of pupils on whom the test was standardised) is set at 100. At Level 2, the norm group average raw score is 18, at Level 3 it is 15.5, at Level 5 it is 16, and at Level 6 it is 15.5. By definition, 10% of the norm group's scores lie at or below the 10th percentile and a further 10% lie at or above the 90th percentile.

Figure 1. Scatterplot depicting the relationship between levels of disadvantage in urban schools (as assessed by a survey in 2005) and 3rd class urban pupils' reading achievement in 2007.



Longitudinal Comparisons

The second main type of comparison undertaken was longitudinal. This involves comparing the overall average reading score of pupils tested in 2007 with the follow-up overall average of the same pupils in 2010. For this exercise, test data from two cohorts of pupils were used. These cohorts consisted of pupils who were in 2nd and 3rd class in 2007 and who took reading and mathematics tests in the same series when they were in 5th and 6th classes in 2010.

The results of the analysis of these longitudinal data are broadly consistent with those of the cross-sectional data. In reading, the average standard scores of pupils in both cohorts were significantly higher in 2010 than they were three years earlier. In mathematics, the average standard score of pupils in 5th class in 2010 was significantly higher than the standard score equivalent in 2nd class in 2007. However, this was not the case for pupils in 6th class in 2010, whose average mathematics score did not differ significantly from their 3rd class average in 2007. There were also significant differences in the number of pupils achieving various performance benchmarks in 2007 and 2010. While a large percentage of pupils (amounting to almost 44% of all pupils) in 2010 had scores in the same percentile category as they occupied in 2007, in cases where pupils moved from one category in 2007 to another in 2010, the move was more often upward than downward. For example, a pupil going from the 11-25th percentile category in 2007 to the category above it (i.e., the 26-50th percentile) in 2010 was more common than a pupil migrating to the category below which contains scores at or below the 10th percentile.

School-level Comparisons

Although most of the analyses carried out in relation to achievement have been at an individual student level, some preliminary work has been done with achievement data which have been aggregated to school level. One example of this approach involved simply counting the number of schools achieving increases and decreases in their mean scores between 2007 and 2010. If there had been no overall change in school level achievement between the two occasions, it would be anticipated that there would be no change at all in schools' average test scores, or perhaps more realistically, that achievement in half of the sampled schools would increase and half would decrease. However, the aggregated data for reading achievement suggests that this is not the case. Of the urban schools that participated in the testing at 2nd class level, 70.3% showed an increase in their average raw score for reading since testing was carried out in 2007. At 3rd and 6th

class level, the average raw score of almost 60% of schools increased between 2007 and 2010. It should be noted that these increases and decreases take no account of the *magnitude* of the change. However, an examination of large changes in average raw scores for 2nd class reading also indicates considerable improvement. About 9% of schools had an increase of 6 or more raw score points on their 2007 average, while no schools had a comparably-sized decrease in points. Outcomes of equivalent comparisons were less marked at 3rd and 6th class levels, but both showed that more schools had a 'large' increase of points than had had a 'large' decrease. Based on a preliminary analysis of the mathematics data, the situation appears less positive. Only a slightly greater percentage of schools have sustained an increase, as opposed to a decrease, in their average scores in mathematics. This is true at all three grade levels. One of the forthcoming tasks in the next phase of the evaluation is to investigate what distinguishes schools that improved their averages from those that did not.

Achievement in Rural Schools

While the main focus of the recently completed report is on presenting evaluation findings relating to urban schools, some data on achievement in rural schools is included. Using the same instruments that were administered to pupils in urban schools, test data on reading and mathematics were collected from 3rd and 6th class pupils in rural schools in 2007 and 2010. Cross-sectional analyses of the data on both occasions indicate that follow-up test scores in 2010 were significantly higher than those in 2007 at both grade levels and in both reading and mathematics. As was pointed out by Weir et al., (2009), the average baseline achievements in 2007 of rural pupils in the SSP were greater than those of their urban counterparts, and closer to the national norm. A similar picture emerged in 2010: the average scores of rural pupils significantly exceeded those of urban pupils and had moved closer to the national norm in both subjects and at both class levels.

Concluding Comments on Pupil Achievement

On the basis of comparisons of the 2007 and 2010 data, there seems to be a fair amount of evidence pointing to raised achievement levels in 2010. However, this cannot be attributed to the programme without first ruling out the impact of other factors, including possible changes in the sample between 2007 and 2010. For this reason, the characteristics of the samples on both occasions were compared on variables that might be expected to have some impact on achievement levels. These comparisons revealed that there were no consistent differences between the two samples in terms of percentages of boys and girls or percentages of pupils from the Traveller community. However, greater percentages of pupils from homes where English or Irish is not the main language spoken were found in the 2010 sample at each grade level. Therefore, the impact of the presence of greater percentages of international pupils in the 2010 sample was investigated to see if this was related to changes in achievement. This analysis revealed that, while the average reading and mathematics scores of pupils whose home language was not English or Irish did increase significantly between 2007 and 2010, so too did the scores of native English/Irish speakers. This indicates that greater numbers of international pupils in the 2010 sample could not account fully for the improved overall average. The magnitude of the improvement, however, was somewhat smaller among those who mainly spoke English or Irish at home than among speakers of other languages.

It is also worth noting that there were fewer absences on the day of testing in 2010 than in 2007, and fewer exemptions from testing in 2010 than in 2007. However, both of these differences were more likely to *lower* rather than raise average test scores on the second occasion. Other factors that may have exerted an influence over achievement levels in 2010 will be explored more fully using data from other sources including parent, teacher, and pupil questionnaires.

Implementation

As is the case with many programme evaluations, two types of questions about implementation arise in the context of the evaluation of DEIS: (1) To what extent has it been possible at system level to proceed with various aspects of the Action Plan as outlined at its launch in 2005?; and (2) How have schools responded to the various initiatives that have been made available to them?

Implementation at System Level

Because of reduced availability of resources and policy developments in other areas, the DES did not proceed with some aspects of DEIS as it was originally designed (access to early education for three-year-olds expected to attend urban SSP schools; a sabbatical leave scheme for teaching staff). The former was compensated for somewhat by the introduction of a state-funded universal preschool year in January 2010.

Provision was made, however, for most other aspects of the Action Plan. For example, provision for extra staffing to reduce pupil-teacher ratios was made. Preliminary analysis of class size data indicates that the class size targets were met by a majority of Band 1 schools in 2007/2008. Further analysis will be carried out on data for 2007/2008, and for other school years, to establish to what extent the minimum ratios for classes were achieved over the first few years of the operation of the programme.

Several services were offered to SSP schools that catered for community and family aspects of a child's educational experience, as well as academic aspects. These included the Home-School-Community Liaison (HSCL) Scheme and the School Completion Programme (SCP). HSCL co-ordinators' two main tasks are to ensure children in their schools, in particular those who may be struggling in school, engage as much as possible in the learning process and to encourage co-operation between home, school and community agencies to enhance the educational

experience of the children (and their parents). The SCP provides access for schools to a range of academic and non-academic supports.

Implementation at School Level

In terms of implementation at school level, the present evaluation was able to draw on some data held by the DES. Implementation data were also collected specifically for the evaluation (focus group type discussions with participants in DEIS; questionnaires for classroom teachers and principal teachers; visits to schools). Some clear findings emerge. First, responses to a Teacher Questionnaire survey in June 2010 confirm data held by the DES to the effect that almost all participating schools in the urban dimension of the SSP are implementing some or all of the four literacy/numeracy initiatives associated with DEIS (Reading Recovery, First Steps, Math Recovery, Ready Set Go Maths).

Second, there is evidence that a policy of positive discrimination for SSP schools in terms of access to support services (e.g., PDST³) was successfully implemented.

Third, a survey of principals shows that all but a very small number of primary schools participating in the SSP (rural and urban) had, by the end of the 2007/2008 school year complied with the requirement to develop a school plan for DEIS. Furthermore, it appears that in most cases there had been a good deal of involvement in developing the plan by most of the school staff and, in the case of about one third of schools, some input from parents. Of particular significance perhaps, in relation to the school plan, is the finding that, as intended, setting of targets was a central part of the planning process. An analysis by the evaluation team of sample targets

³ When DEIS was introduced, schools in the SSP were given priority support from two separate organisations, the School Development Planning Support (SDPS) service and the Primary Curriculum Support Programme (PCSP). These organisations subsequently merged to become known as the Primary Professional Development Service (PPDS). In 2010, the service became known as the Professional Development Service for Teachers (PDST). For convenience, the term PDST is used here to refer to the service as it existed since the programme began.

supplied by principals indicates that while not all targets are in perfect compliance with guidelines (e.g., in terms of the extent to which they incorporate quantifiable change), the basic underlying concept appears to have been taken on board by schools. It is worth noting, in particular, that in setting targets for literacy and numeracy, schools tended to take national targets into account while recognising their own particular circumstances.

Participants' Opinions of the Programme

Obtaining feedback from participants (school staffs, members of national support and co-ordinating teams and, to a limited extent, students and parents) is an ongoing part of the evaluation of DEIS. To date, using the methodologies referred to in relation to implementation above, the main focus has been on participants' experience of and opinions about the operation and impact of DEIS in four areas: resources, the extent to which approaches to tackling disadvantage are integrated, school development planning, and professional support for teachers.

There is widespread positivity about the extra resources available to schools in the SSP. Great value is placed by school staffs on the additional funding provided and on the resources attached to specific initiatives such as those for literacy and numeracy. However, in the opinion of many participants, the most important resource is additional staff and, in particular, staff that can be assigned to classroom teaching and the reduction of class size. Indeed there is support for extending the class size reduction element of the SSP by, for example, applying the same maximum class size (20 pupils) to senior and junior classes or providing extra staff to larger rural schools.

From early on, the evaluation team was aware of some concerns about resources, how they were allocated and the risk that they might be withdrawn. For example, staff in some Band 2 schools argued that their level of disadvantage warranted inclusion in Band 1. More generally, at some of the 'focus group' sessions a few participants argued for a more refined way of

linking resource allocation to levels of disadvantage (e.g., a sliding scale). One concern, which is, in fact, groundless, regularly emerged. This is based on a belief that improved performance on the tests being administered as part of the evaluation could lead to a withdrawal of resources.

Large majorities of staff in participating schools believe that approaches to tackling disadvantage are well integrated in their schools (e.g., 94% in the case of classroom teachers in urban schools). There is a belief that the introduction of DEIS has helped in this regard in some cases (e.g., the development of the school plan was an opportunity for greater cooperation), although in other cases, staff felt that the approach to disadvantage was not particularly fragmented before DEIS. The extent to which schools are seen as being in effective collaboration with other agencies is quite variable but the predominant view is that progress has been made.

There is widespread approval for the role of school development planning. The vast majority of principals and other staff report that the process of developing the DEIS plan and its subsequent implementation had impacted positively on the work of the school.

In terms of professional support, it is clear that access to the PDST and its forerunners is seen as a very significant part of DEIS, especially in relation to the role of facilitators in the development of the school plan and of advisors in the introduction of literacy and numeracy initiatives. Notwithstanding overall positive attitudes to professional support, it is worth noting that many classroom teachers (about two thirds in urban schools and about a half in rural schools) see room for improvement in relation to professional development in the context of DEIS.

In almost all attempts to get participant feedback in the evaluation, an opportunity is given for participants to suggest improvements in provision for disadvantage. Apart from the suggestions noted earlier about resources, the area most often raised has been provision for students with emotional or behavioural difficulties.

Conclusion

Although it arises indirectly rather than directly from the evaluation, it is worth noting that the data collected as part of this evaluation appear to support the validity of the method used to assess disadvantage (and ultimately identify schools for inclusion in the programme). The assessment method used, while unsatisfactory in several respects (see Weir & Archer, 2005), was found to predict accurately aggregated school achievement.

There is clear evidence that achievement in reading and mathematics in sampled schools was higher in 2010 than in 2007. While the difference appears small in absolute terms, it is statistically significant, and is found at all grade levels. Progress appears most marked among pupils with lower levels of achievement, and positive change in achievement is most evident in junior grades. While the data do not exist to permit these changes to be attributed with certainty to the programme at this stage, some alternative reasons for the change have been ruled out. Neither is it possible to say what distinguishes schools that improved from those that did not. Nevertheless, it is interesting to speculate about why changes are being observed in this programme and not in previous ones. While DEIS is a new programme, most, but by no means all, schools have participated in previous programmes aimed at addressing educational disadvantage. For a majority of participating schools, therefore, DEIS may be viewed as consolidating, as well as building on, existing provision.

There are three main areas in which DEIS differs from, or goes beyond, pre-existing approaches. First, the focus on the development of a school action plan has been more intensive than in previous programmes. Planning for DEIS was supported by input from the PDST, and schools were encouraged to set clear targets, particularly in the areas of literacy and numeracy. Second, DEIS is the first programme of its kind to provide literacy and numeracy programmes to participants. Third, along with the establishment of the planning process and making literacy and numeracy

programmes available to schools, a system of supports was put in place to assist schools with their planning and with their implementation of the programmes.

It is hoped that the next phase of the evaluation will provide an opportunity to gain more insight into what is effective by identifying the factors underlying progress and lack of progress. Some data already exist that will help in that regard (e.g., responses to a teacher questionnaire from June 2010) and data from a follow-up questionnaire on planning in primary schools will be available later in 2011. However, these are self-report instruments, and experience from this evaluation and research elsewhere suggests that such data need to be complemented by more intensive data collection approaches such as observations in schools and classrooms and interviews with key personnel. It is with this in mind that we are planning to organise visits to some participating schools in the current term in which we will meet with and interview principals. It is hoped that these visits will allow us to gain insights into what are emerging as some of the key elements of the programme, such as school planning for DEIS. As with all such activities, the next phase of the evaluation will place demands on participating schools. So far, SSP schools have been extremely helpful and open in co-operating with the evaluation. We are confident that this will continue to be the case.

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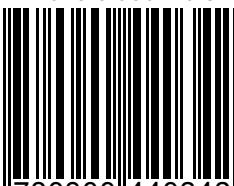
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