Key features of a whole-school, design approach to literacy teaching in schools

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Introduction

Over the past four years, we have been involved in two large-scale, longitudinal projects undertaken in partnership with the Department of Education and the Catholic Education Office in Victoria. The aim of both projects has been to refine, implement and evaluate a whole-school, design approach to improving early literacy outcomes. The schools we have worked with have comprised schools serving mainly students from educationally disadvantaged backgrounds. In this paper, we describe the two projects, outline the main features of the approach that we have refined within the these projects and present data indicating the results achieved in the project schools.

The Early Literacy Research Project (ELRP) was a joint initiative with the Victorian Department of Education. The project was initiated towards the end of 1995 to develop a system-wide approach to maximising the literacy achievements of 'at risk' students in the early years of schooling (ages 5-8). It involved the refinement, implementation and quasi-experimental evaluation of a whole-school design. The project formally ran for three years (1996-98) with data collected at the beginning and end of each school year in 27 trial schools and 25 reference schools. Intensive professional development was undertaken in each of the 27 trial schools. Findings from the project (Crévola & Hill, 1998a) have been used as the basis for the Department of Education's *Early Years Literacy Program* materials and support program for schools (Department of Education, 1997). They were also instrumental in securing additional resources which were made available to all government primary schools at the beginning of 1999 to enable them to implement key components of the design.

The Children's Literacy Success Strategy, or ClaSS, is a joint initiative of the Catholic Education Office in Melbourne. This project is being supported with funding from the Commonwealth Government through its literacy strategy. CLaSS is the acronym chosen to refer to a systemic approach to maximising the literacy achievements of all children in the first three years of primary schooling (Years P-2), but especially of those children who are at risk of not achieving success. CLaSS builds on work undertaken within the Early Literacy Research Project and is documented in Crévola and Hill (1998b). The project commenced in 1998 with an intake of 39 schools. In 1999, a further 90 schools joined the project.

The significance of a whole-school, design approach

The starting point for our thinking about effective teaching and learning in schools has been a belief in the importance of pursuing a coherent, whole-school approach. Research into school and classroom effectiveness tells us that while there is significant variation among schools in the progress made by students, this variability is not as great as the differences among classes within schools (Monk, 1992;

Scheerens, Vermuelen & Pelgrum, 1989). Our own research confirms these findings and indicates that while in most schools there are classes in which students make very rapid progress, there are other classes in which students make little or no progress at all (Hill & Rowe, 1996). If this internal variation could be minimised and all classes brought up to the level of the most effective, dramatic improvements in outcomes could be achieved.

What are the main characteristics of effective teaching? Reviews of many thousands of studies point to a small number of factors as being important. Scheerens and Bosker (1997) conclude on the basis of meta-analyses of findings and best-evidence syntheses that the basic factors are: time on task; closeness of content covered to assessment instrument; a structured approach: specific objectives, frequent assessment and corrective feedback; and types of adaptive instruction that can be managed by teachers (e.g. no more than two within-class ability groups per classroom). We have argued, on the basis of the same evidence, that the literature on effectiveness supports just three factors which closely resemble the four factors of Scheerens and Bosker, namely: high expectations of student achievement; engaged learning time, and focused teaching that maximises learning within each student's 'zone of proximal development' (Vygotsky, 1978).

Using these three factors as a starting point, we have then proceeded to identify the key elements of a school that facilitate effective teaching and to work out how each of these elements should be designed so that they operate effectively and in alignment with each of the other elements. The end result has been what we refer to as a whole-school design. School designs are quite new within the Australian context, although they have become very significant in the USA, particularly in the wake of the work undertaken by the New American School Development Corporation (NASDEC) (Stringfield, Ross & Smith, 1996). At the same time, the details of each design element in our early literacy design are not new at all, but build upon existing good practice. The 'newness', as we have articulated elsewhere (Hill & Crévola, 1999) is in:

- the degree of focus and commitment to the goal of meeting challenging performance targets that embody defined standards of performance;
- the coherence and depth of the beliefs and understandings that underpin every element of the design; and
- the rigor and sophistication with which each design element is examined, re-designed and managed to ensure that targets for success are achieved.

Figure 1 summarises in graphical form the general design elements that we have built into our design for early literacy. The following summary of each of the design elements is an abbreviated version of the description given in Crévola and Hill (1998b).
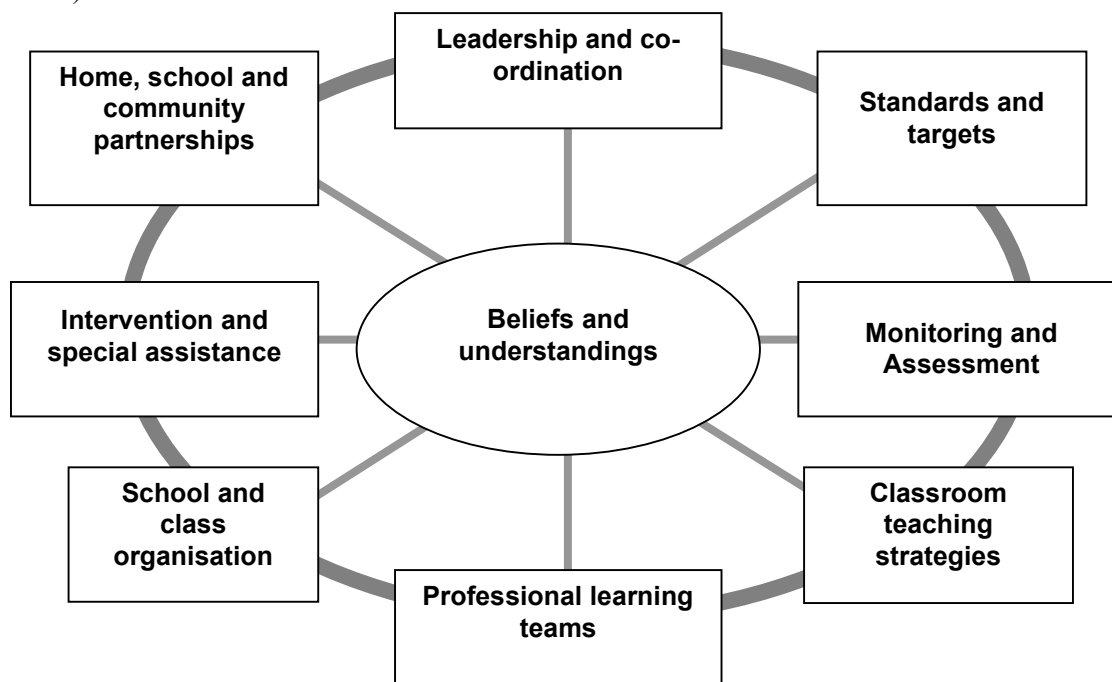

**Figure 1. General design for improving learning outcomes
(Hill & Crévola, 1997)**

Beliefs and understandings The central element in the design is the set of shared beliefs and understandings of both staff and students. It is important, for example, that there is a belief in the capacity of all students to achieve high standards given sufficient time and support (Heady & Kilgore, 1996). Our experience has indicated that much work has been necessary in most schools to change thinking away from an assumption that many students are incapable, because of background and other circumstances, of being successful at school. It is also necessary for teachers to have a belief in their own efficacy (Ashton & Webb, 1986; Lee, Dedrick & Smith, 1991; Rosenholz, 1989) and for school administrators to believe that almost all teachers can teach to high standards given the right conditions and assistance. This implies that principals and the school leadership team accept the need for invest in professional development and in providing the conditions under which teachers can seek to continuously improve their classroom teaching.

Beliefs that enable effective teaching to occur need to be accompanied by expert knowledge. Effective teachers are professionals who are able to articulate what they do and why they teach the way they do. That is, they need to be theory-based rather than trade-based in their orientation to teaching.

Standards and targets
Typically in curriculum documents one finds detailed information about the kinds of content to be covered and the stage of schooling in which the material is to be covered. This content is typically expressed in the form of statements of expected student outcomes which provide a general indication of the kinds of things students should be able to do. We have found it helpful to go a stage further, to develop performance standards and associated targets. A couple of examples readily indicate the difference between statements of expected student outcomes and performance standards and associated targets. The draft version of the *Curriculum and standards framework II* (Board of Studies, 1999: 111) contains the following statements of expected student outcomes:

> 2.5(a) Read short texts with familiar topics and vocabulary, predictable text structures and frequent illustrations.

Compare this with the following Minimum Statewide Standards for Reading established by the Department of Education, Victoria as part of its Keys to Life Early Literacy program:

> 80% of students (deemed as capable) reading unseen texts with a minimum 90% accuracy at or above Reading Recovery level one by the end of their first year of schooling.

> 100% of students (deemed as capable) reading unseen texts with a minimum 90% accuracy at or above Reading Recovery level five by the end of their second year of schooling.

Within the ELRP and CLaSS projects, we have developed and worked with the performance standards and targets as set out in Table 1. While these have provided an overall framework for the project schools, they do, of course, need to be translated into specific targets for individual schools and indeed for individual students.

Monitoring and assessment
Assessment is critical in monitoring progress towards meeting defined targets, but it is even more important as a means of establishing starting points for teaching and learning. Within both the ELRP and CLaSS projects, extensive assessment has been conducted at the beginning and end of each school year using a series of teacher observation measures, including the six the measures comprising *An Observation Survey of Early Literacy Achievement* (Clay, 1993a) and the *The Record of Oral Language: Biks and Gutches* (Clay, Gill, Glynn, McNaughton & Salmon, 1983). These measures were selected for the diagnostic information that they provide, their capacity to reveal students' strengths and weaknesses and to suggest foci for classroom teaching.

Classroom teaching strategies
Effective teaching is structured and focused on the learning needs of each student in the class. This is by no means an easy task. It constitutes one of the greatest challenges faced by teachers, particularly given the wide range of abilities within the typical classroom. Focused literacy teaching requires well-developed understandings

of how children learn and of the reading and writing processes. It requires well-developed classroom routines and expert organisation and management related to the teaching of small groups. It also requires teachers who are adept in implementing a range of classroom practices and strategies in response to the needs of individual students.

In the ELRP and CLaSS projects, the emphasis has been on raising the professional competence of teachers so that they are better able to implement effective classroom literacy strategies that are both structured and focused on the learning needs of all students. These strategies are not unknown to many teachers. Particularly through programs such as the *Early Literacy In-Service Course (ELIC)*, a high proportion of Australian teachers have long been familiar with them. *ELIC* drew upon good first teaching practices that have been widespread in New Zealand classrooms over the past twenty years and that were credited with leading to that country's pre-eminent ranking in international surveys of reading. These practices incorporate a number of strategies that have been carefully researched and documented (Clay, 1991; Department of Education, New Zealand, 1985; Holdaway, 1979) and continue to be a rich resource to the present day.

In the Victorian context, these teaching strategies have been adopted by many teachers, often in a partial and *ad hoc* manner without the necessary organisational procedures in place to enable them to be maximally effective. In professional development sessions organised for project schools, the emphasis has been on assisting teachers to combine the following strategies within a daily two-hour literacy block:

- Oral Language
- Reading to children
- Language experience (reading)
- Shared reading
- Guided reading
- Independent reading

- Modelled writing
- Shared writing
- Language experience (writing)
- Interactive writing
- Guided writing
- Independent writing

The structure of the two-hour literacy teaching block is shown in Figure 2. It is within this three-part, whole-class, small-group, whole-class structure that each of the above strategies have been integrated into effective classroom practice.

WHOLE CLASS FOCUS

The daily reading workshop begins with a 'whole class' focus which is based on the Shared reading strategy. Shared reading can consist of books, charts, poems, songs etc. The daily writing workshop begins with a 'whole class' focus which consists of either Modelled writing or Shared writing. This element of the classroom program sets the scene for the workshop, providing an initial teaching focus and a specific teaching of the visual information of print, including direct instruction in phonics. This is a teacher-directed time.

SMALL GROUP TEACHING FOCUS

This section of the reading and writing workshop focuses on the explicit teaching of small groups of students. During the reading workshop the strategies of reading to children, language experience and guided reading take place at the same time that learning centres are in operation for the remainder of the class. During the writing workshop the teaching strategies of language experience, interactive writing and guided writing take place while the remainder of the class are engaged in independent writing and various other activities included to extend the students' understandings of grammar and spelling. This is a time for students to take responsibility for large sections of their learning time.

WHOLE CLASS FOCUS: SHARING
This is the concluding section of both the reading and writing workshops and it is a time for reflection when students articulate what they have learnt. During this time the teacher encourages the development of the students' oral language. This share time draws the workshop to a close and the teacher concludes the formal reading and writing components for the day. This also is a teacher-directed time.

Figure 2. Structure of the daily two-hour literacy teaching block

Professional learning teams
In order to impact on teachers' beliefs and understandings and to establish a process for institutionalising a whole-school design approach to early literacy, it has been necessary to consider carefully what constitutes an effective approach to professional development. While the model has varied slightly between the two projects, the following have been common to both. Teachers in the early years have been formed into teams and these teams have attended off-site university-based professional development sessions. The main purpose of these sessions has been to provide the impetus for further thought and discussion. They have been complemented by on-site professional development which has taken place daily within the context of the school. A team co-ordinator has been appointed at each school with a significant time allocation to the role. The co-ordinator has acted as a mentor and lead learner and has organised visits to teams in other schools, demonstration teaching, and classroom observation. The co-ordinator also chairs weekly professional learning team meetings.

The team is the main vehicle for growing professionally. Team members take joint responsibility for all students supervised by all team members and also assume responsibility for each other's professional growth. The professional learning team is the key strategy for bringing all classes up to the level of the most effective class and for then moving on to become even more effective.

School and class organisation
In order for classroom teaching to be effective, key aspects of how the school operates require careful consideration. Thus, attention has been given in systematic ways to issues such as the allocation of time, staffing issues, the provision of resources such as the availability of multiple copies of student texts, class sizes, and so on.

Considerable work has been necessary to establish school-level policies to eliminate unnecessary interruptions and to establish classroom routines that minimise disruptions. The latter have involved daily use of within-class mixed ability groups and the aforementioned use of instructional blocks organised according to a whole class/ small group/ whole class structure.

Intervention and special assistance
Even with the best teaching, experience indicates that many students will need extra time and support if they are to reach minimum standards. Research indicates that for those students who are most at risk, one-to-one intervention is likely to be the most effective (Wasik & Slavin, 1993). In this context, in both projects Reading Recovery has been used as a mandatory element in each of the project schools to provide an accelerative program for the lowest-achieving students in the second year of schooling (Clay, 1993b). For students who have continued to experience difficulties beyond their second year, individual learning plans have been developed and ongoing, specialist support has been provided.

Home/ school/ community partnerships
There is an enormous amount of evidence to indicate that an effective school is one that is proactive and systematic about linking with the home, the previous school, other service providers and the wider community (Cairney, Ruge, Buchanan, Lowe & Munsie, 1995; Epstein, 1991). There is good evidence to indicate that a range of problems such as poor attendance can be tackled successfully when schools are proactive and develop genuine partnerships with the home (Chrispeels, 1996).

In both projects, a critical design feature has been the implementation of training programs for parents and other classroom support personnel to enable them to provide support in the classroom to the teacher, particularly by ensuring on-task behaviour of students working in learning centres thus enabling the teacher to work directly with small groups of students.

Leadership and co-ordination
A critically important understanding to emerge from the two projects has been the importance of investing in professional development for principals to assist them exercise their role as instructional leaders. Whole-school design approaches depend to an extraordinary degree on the leadership provided by the principal and senior administration of the school, since only they are in the position to make sure that each of the design elements is attended to and brought into alignment. On a day-to-day basis, a great deal of vital leadership is exercised by the co-ordinators, whose role was discussed earlier. Teachers selected for this role need professional development that goes beyond gaining a better understanding of literacy and classroom teaching and includes training in being a coach, a mentor and a lead learner.

Evidence of the impact of adopting a whole-school design approach

Two kinds of analyses have been undertaken to evaluate the effectiveness of the designs in both the ELRP and CLaSS projects. The first had focused on the extent of the improvement in the proportions of students meeting the minimum and target standards as set out in Table 1. Figures 3 and 4 summarise relevant information for the ELRP. Figure 3 compares the performance of Year Prep students in the reference

schools at the end of 1996 with the performance of Year Prep students in the trial schools at the end of 1998. This comparison assumes that the abilities of students in trial and reference schools are comparable, which is a valid assumption the reference schools were carefully matched with the trial schools using the Department of Education, Victoria's, six-indicator measure of social and educational disadvantage known as the Student Learning Needs (SLN) Index.
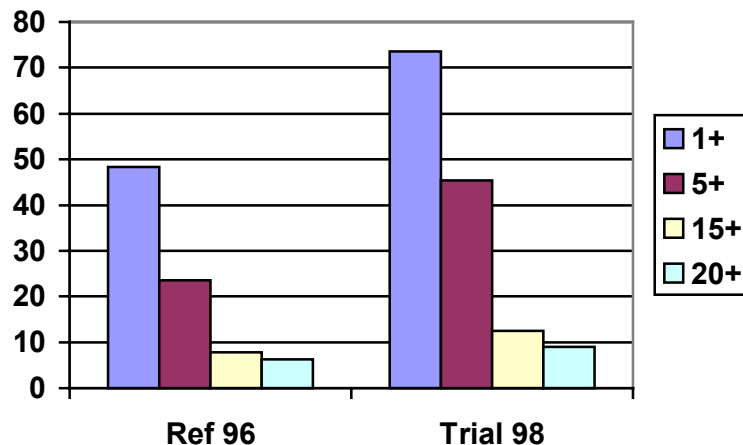

Figure 3. Comparison of the performance of Year Prep students in reference schools at the end of 1996 with that of Year Prep students in trial schools at the end of 1998

The change from less than half of students underway (level one) to almost three-quarters of students underway represents a substantial improvement. Furthermore, the improvement is reflected in the proportions of students performing at higher levels, particularly the proportion reaching level five. At the same time, it is evident that even given the high degree of support provided through the ELRP over three years, the trial schools as a whole were unable to improve literacy levels sufficiently to reach the State-wide Minimum Acceptable Standard of 80% of students (deemed as capable) reading unseen texts with 90% accuracy at or above Reading Recovery level one by the end of their first year of schooling. This indicates that while the State-wide Minimum Acceptable Standard is likely to be well within the reach of most primary schools, it represents a very ambitious target for the most disadvantages primary schools.

Figure 4 presents comparative data for Year 1 students. Once again, the improvement in the proportions meeting the targets are substantial, but the trial schools nonetheless fell short of both the project targets and the State-wide Minimum Acceptable Standard of 100% of students (deemed as capable) reading unseen texts with 90% accuracy at or above Reading Recovery level five by the end of their second year of schooling. Once again, this suggests the need for targets that are specific to and tailored to the demographic characteristics of the students in individual schools.
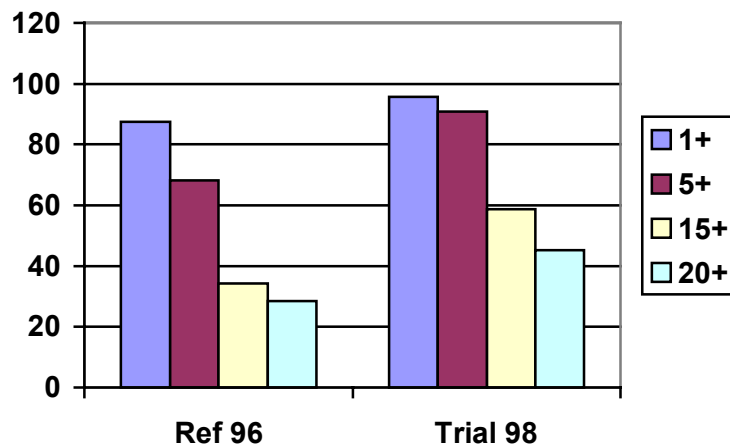
Figure 4. Comparison of the performance of Year 1 students in reference schools at the end of 1996 with that of Year 1 students in trial schools at the end of 1998

The second kind of analysis has involved multilevel modeling of the pre- and post-test data from both the trial schools in both projects and a control or reference group of schools. This was undertaken to estimate an effect size for the design in both projects. The results are summarised in Table 2. The first row of the table indicates the sample of schools involved in the analysis of the data for Year 1 students in each project. In the case of the CLaSS project, pre- and post-test data were available from the great majority of Catholic primary schools and so these were used as an unmatched control group. In the case of the ELRP, the reference schools were a matched group of schools.

The remainder of the table gives parameter estimates for a multilevel model that seeks to explain the post-test literacy achievements of students in terms of a number of explanatory variables. The model was estimated using the multilevel modelling software of Rasbash, Goldstein and Woodhouse (1995). The variables used in the two projects differed slightly. In the case of the ELRP, the pre- and post-test measures were composite scores obtained from fitting a one-factor model to ten separate measures of student literacy, namely three of the subtests of the Woodcock Language Proficiency Battery, the six measures comprising the Observation Survey and the record of Oral Language. In the case of the CLaSS project, the pre- and post-test measures were composite scores obtained from fitting a one-factor model to eight separate measures of student literacy, namely the Burt Word Test, the six measures comprising the Observation Survey, and the record of Oral Language.

Table 2. Parameter Estimates and Effect Sizes for Two Multilevel Regression Models Fitted to Data for Year 1 Students in the ELRP and CLaSS Projects

ELRP 50 schools (27 trial), 150 classes, 1745 students		CLaSS 274 schools (39 trial), 610 classes, 8666 students	
Parameter	Estimate	Parameter	Estimate
Fixed:		**Fixed:**	
Intercept	-0.222*	Intercept	-0.078*
Gender (female)	0.069	Integration student	-0.257*
Educational disadvantage (SLN)	0.003	NESB	0.034*
Prior achievement (pre-test)	0.881*	Poverty (EMA)	0.024*
		Prior achievement (pre-test)	0.840*
ELRP trial school	0.280*	CLaSS trial school	0.297*
Random:		**Random:**	
School	0.029*	School	0.037*
Class (intercepts)	0.021*	Class (intercept)	0.037*
Class (intercept/slope covariance)	0.003	Class (intercept/slope covariance)	-0.000
Class (slopes)	0.015*	Class (slopes)	0.021*
Student	0.187*	Student	0.208*
Effect size	**0.648**	**Effect size**	**0.652**

$*$ Statistically significant parameters (95% confidence level)

Different explanatory variables were used to adjust for students background characteristics. It will be noted, however, that by far and away the most important predictor of end-of-year achievement was the students' achievement levels at the beginning of the year.

In the models fitted to both data sets, the critical explanatory variable is a dichotomous variable indicating whether the student was in one of the trial schools implementing the whole-school design approach summarised in Figure 1. In both cases, parameter estimates are large, positive and statistically significant. The final row of Table 2 indicates the effect size represented by the parameter estimates, which were computed using the formula:

$$\text{Effect Size } (\Delta) = \text{dummy coefficient} / \sigma_e = \beta_1 / \sigma_e,$$

This yielded almost identical estimates of 0.648 for the ELRP and 0.652 for CLaSS. An effect size of 0.65 of a standard deviation is typically regarded as a large effect size and indicates that substantial improvements in literacy outcomes were achieved in both projects.

Conclusions

The outcomes of the ELRP and CLaSS longitudinal projects indicate that substantial, measurable improvements in early literacy outcomes can be achieved when schools adopt a whole-school, design approach. These results have not been achieved through the implementation of new methods or techniques, since we believe that teachers

already have access to a repertoire of powerful and effective strategies for teaching students to read. Rather, they have been achieved by attending in a systematic fashion to all the elements in a school that contribute to improved learning outcomes.

Within the design used in the ELRP and CLaSS projects, probably the most significant features in promoting change and development have been:

- a two-hour, uninterrupted daily literacy block for all students;
- the setting of rigorous performance standards and associated targets that seek to have all students performing at a high standard by the end of their second year of schooling;
- a focus on data-driven instruction with assessment of all students at the beginning and end of each year on a full range of measures, plus ongoing monitoring on a regular basis throughout the year;
- the use of Reading Recovery as a one-to-one tutoring program for all students in Year 1 who are not making adequate progress;
- the appointment and training of an early years literacy co-ordinator with at least a 0.5 time release in each school.
- ongoing, externally-provided structured professional learning for teams of teachers to challenge teachers' thinking, develop their beliefs and understandings, and help them to understand how they can use a range of powerful teaching strategies in meeting the needs of the range of students in their classes;
- on-site professional development through observation, team teaching, weekly teams meetings and visits, mentoring and coaching as facilitated by the co-ordinator;
- separate professional development sessions for principals focusing on the principal as an instructional leader and their role in promoting and managing the early literacy program of the school.

Many of these features can be found in most primary schools, but in few schools are all these features in place. We believe the challenge for schools and systems is to ensure that these features become the norm as education systems face the new challenge of high literacy for all.

Authors

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