ICT created diversity in the classroom: the contemporary learner

ICT CREATED DIVERSITY IN THE CLASSROOM: THE CONTEMPORARY LEARNER

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Abstract

Many commentaries have been published proposing the identity of the contemporary learner that is related to the availability of ICT. This paper reports a study into the identities of primary learners that develop as a result of use of ICT in social groups. The range of identities of learners is not a one-size-fits-all, suggesting that the diversity of learners in the classroom is increased by ICT use in social groups. Consequently, teachers are challenged by a continuum of diversity that extends far beyond the diversity of previous times. The nature of this diversity requires attention by teachers and the design of approaches related to ICT in the classroom that is consistent with it. This paper outlines implications for consideration by teachers.

Introduction

The congruence between the learner and the learning environment relates to the productiveness of learning (Duschl, Schweingruber, & Shouse, 2007). Consequently, easy recognition of the learning environment by the learner increases the potential for learning. Consequently, the challenge for teachers is the construction of a learning environment recognisable to and comfortable for as many learners as possible.

Many factors make this difficult. One factor is the many sources of diversity amongst learners. Traditionally, diversity is related to culture, religion, gender, and socio-economics. However, the source of diversity of children presenting themselves daily in classrooms is increasing. In this era of Information communications technologies (ICT), it needs to be recognised that ICT are a further source of the diverse nature of the contemporary classroom.

This viewpoint is contrary to many ICT-related commentaries (e.g., see Oblinger, 2003, Pitler, Flynn, & Gaddy, 2004, Prensky, 2001)) that labelled all learners as digital natives or used similar words in a ‘one size fits all’ label for contemporary learners. These commentators would have us believe that use of ICT is viewed as a characteristic of all contemporary learners in western countries.

In this paper, it is argued that one label is not applicable to all learners. On the contrary, an Australian study concluded that ICT increase the diversity of learners in the classroom. Results of this study indicated that the use of ICT differs greatly in purpose, type and quantity of use.

The diversity created by ICT use beyond the school is manifold. The study identified many forms of diversity with ICT use. Consequently, this diversity presents many challenges in the classroom. Firstly learners who use ICT at home have discovered different ways of learning that are often inconsistent with classroom approaches, often independent and self-directing.

The term learner is used in this paper in place of the term student in recognition of the contemporary learner no longer being a student who comes to school ready to be filled up with whatever the teacher is ready to cover or deliver.
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These learners have found that they can be in control and therefore, the concept of depending on the teacher to deliver content in the role of a student is no longer relevant (Sefton-Green, 2001). Secondly, learners who do not use ICT at home find incongruence in an environment that has high expectations for the use of ICT. Consequently, for some children, ICT create learning chaos as they struggle to make sense of their place in a classroom with ICT and teacher expectations for extended knowledgeable use of hardware and processes, thereby, creating learning challenges.

These diverse identities of ICT users were identified in a recent study that sought to provide a catalyst for teacher thinking about the role of ICT in the classroom. In this Australian study of primary school aged children (Thrupp, 2007), it was concluded that the availability of ICT beyond the school has less impact on the lives and activities of children than promulgated in earlier literature (Prensky, 2001). Rather, children use ICT as a means to engage in interactions and activities in which they want to engage, these being largely determined by their ICT-related social groups (Thrupp, 2007). Consequently, social groups, not ICT, determine quantity and type of ICT use. These social groups are the source of an individual’s ICT identity (Holland & Lachiotte, 1998, Peneul & Wertsch, 1995). Herein lies the diversity, which is at the heart of designing for and managing learning in the classroom.

In the following sections, the study is outlined including the literature and the discussion of results. This is followed by resultant assumptions and conclusions.

The Study

The purpose of this study was to investigate aspects of the identity of the contemporary learner that are associated with the use of ICT. As identity is in part derived from social activity, the study identified the ICT-related artefacts, social practices, and social groups in which a group of Year Six learners engaged.

This study, therefore, sought to identify the ICT-related social practices of a group of contemporary learners; the social groups associated with these practices; and consequential identity associations. An assumption for this study was that because of ICT, learning has no boundaries and that school and social cultures are not bounded environments (Shumar, 2005). If teachers are unaware that the identity of learners in their care is different from the identity of children from five or ten years ago, there is potential for incongruence between the learner and the learning environment with regard to curriculum, pedagogy, and learning outcomes. There is consequently a need for the identity of contemporary learners to be characterised in order to better inform teachers about the learners in their classrooms.

As an investigation of primary school learners’ identities as shaped by social practices linked to their use of ICT, and by their participation in social groups associated with those practices, this study filled a gap in the literature by its socio-cultural perspective.

Literature

ICT are of particular interest in the current educational context as writers, both academic and media, assert that the lives of the current generation of learners are different from earlier generations due to ICT. Consequently, there is a pervasive societal expectation that at school, learners engage with ICT tools and processes (Sefton-Green, 2001). The basis for this expenditure and these expectations is the belief that just as ICT have completely permeated the lives of both adults and children (Oblinger, 2003; Prensky, 2001), school life should similarly be permeated with ICT use (Oblinger, 2003; Papert, 1993, 2007; Prensky). That is, the identities of children are inextricably linked to the use of ICT at both home and school (Silverstone, Hirsch, & Morley, 1992).
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The twenty-first century brings with it an ever-increasing array of new items of technology (Appleton, Hunt, Heldsinger, & Thrupp, 2005). These items have generated processes such as emailing, chatting, meeting and playing games online, many of which can be undertaken using the same piece of equipment. These new items and processes are known as ICT and are defined as the means of communicating and managing the access, collection, and construction of information (Chase, 2002). It has been suggested that these interactions constitute a major part of childhood for the contemporary primary-school-aged learner (Sefton-Green, 2001).

In most western countries, childhood has changed for this generation due to ICT (Papert, 2007). Growing up was once characterised by interactions with friends and family (Samoriski, 2002). That is, childhood interactions have been extended beyond face-to-face type interactions. These extended childhood interactions for this generation occur within “an electronically mediated environment” (Samoriski, p. 297). As a result, interactions and communication with people are of the child’s choosing. ICT have changed the meanings of time, form, and space of social and pedagogical activity (Hayes, Mills, Christie, & Lingard, 2006). Without the need to be face-to-face, travel to the same physical space is no longer required for social activity (Perrollo, 1999). Hence, communication between friends is not necessarily bounded by time and distance (Jukes & Dosaj, 2006; Perrollo, 1999), feasibly even taking place when one is sleeping and the other is awake. Decisions about interactivity, then, are under the control of the individual.

There are two main assumptions. The first assumption is that ICT are responsible for changes in learners of this generation, as claimed for example, by Jukes and Dosaj (2006). On the other hand, others believe that it is the contexts of their use (Livingstone, 1994, 2006a; Luke, 2000) that are responsible. Hence, to understand the identity of contemporary learners, it was necessary to go beyond the media hype associated with advertising ICT artefacts for educational use (Kennedy et al., 2006); and explore the ICT uses preferred by learners, their social practices, and their use in social groups.

The second assumption is that all learners enter relationships with or through ICT (e.g., Prensky, 2001). Whether or not this is based on evidence or is akin to an ambit claim, anecdotal evidence suggests this is not necessarily so. Hence, in this study it was considered necessary to investigate the proportion of learners who use these ICT, engage in related social practices, and participate in ICT-associated social groups to evaluate the pervasiveness of these identities in classrooms. Therefore, this study investigated ICT artefacts used by learners, any associated social groups with which learners engaged, and learners who did not engage in ICT social groups.

In summary, the increase in the availability of ICT and its affordability in the twenty-first century has led some to claim that the personal lives of today’s children are different from those of earlier generations (Livingstone, 2006b). However, this study proposed the difference to be related to social practices associated with digital technologies that occur during the informality of day-to-day living as opposed to ownership and access. Further, the difference is considered to be associated with the learning opportunities provided by access to these ICT, where the opportunities occur, and their characteristics.

Consequently, the research question was:

To which social groups associated with ICTs do Year Six learners belong?

Results

The study used a case study approach, interviewing Year Six children to identify social groups associated with ICT of contemporary primary-aged learners. Groups form for different purposes and engage with artefacts or props (Gee, 1992). It is the engagement in the social practices of these groups and the consequential learning that influences the development of identity (Holland & Lachiotte, 1998). The groups investigated in this study were those associated with ICT, in particular those groups

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2 Artefacts are defined in this study as both ICT hardware and processes (e.g., Internet)
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that regularly engaged with ICT artefacts and related social practices. Predominantly, different groups engaged with the same artefacts. However, the relationship of learners, artefacts, and social practices differed (Silverstone et al., 1992) due to the variety of processes associated with the objects. Figure 1 provides an overview of the categories of social groups identified in this study (see shaded cells). It also includes two categories of individuals who did not participate in social groups associated with ICT.

Figure 1: Overview of social groups identified in the study

In the study, two categories of social groups associated with ICT were identified. Both categories one and two included groups that were involved with ICT; however, the nature of involvement differed resulting in the labels: ICT-related (Category One), and ICT-supported (Category Two). The third column of Table 1 shows how these categories differed.

Table 1 Definition of categories of social groups

<table>
<thead>
<tr>
<th>Category</th>
<th>Category Name</th>
<th>Descriptions of Dominant Social Practices</th>
</tr>
</thead>
<tbody>
<tr>
<td>One</td>
<td>ICT-related</td>
<td>Artefact-focused, home-based, strong family modelling</td>
</tr>
<tr>
<td>Two</td>
<td>ICT-supported</td>
<td>People-focused, home based, participant initiated</td>
</tr>
</tbody>
</table>

The remaining participants involved in this study acted as individuals in relation to ICT or did not attach priority to ICT. These individuals formed two categories. The first (Category Three) consisted of a cluster of individuals who did not function as a social group in relation to ICT, even though they engaged with ICT. The second (Category Four) consisted of a cluster of individuals who had minimal engagement with ICT.

The phrasing of the Research Question, To what social groups associated with ICT do Year Six learners belong? was based on the assumption that ICT-related social groups would exist for all students, and therefore the research task was to identify them. However, findings revealed that this assumption was not true for all participants. Consequently, the study found that fifty-five per cent of participants in this study took part in social practices associated with ICT in five social groups, the largest of which was found to be the Gamers group (ICT-related category). However the ICT-
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supported category and ICT-related category were similar in size. (See Table 2) Forty-five percent of participants did not engage in social groups.

Table 2: Membership of groups identified in study

<table>
<thead>
<tr>
<th>Categories</th>
<th>ICT Relationship with Group</th>
<th>Names of Groups</th>
<th>Cases in group</th>
</tr>
</thead>
<tbody>
<tr>
<td>Business</td>
<td>ICT-related</td>
<td>Business</td>
<td>n = 2</td>
</tr>
<tr>
<td>Gamers</td>
<td>ICT-supported</td>
<td>Gamers</td>
<td>n = 8</td>
</tr>
<tr>
<td>Friends and siblings</td>
<td></td>
<td>Friends and siblings</td>
<td>n = 4</td>
</tr>
<tr>
<td>Home and away</td>
<td></td>
<td>Home and away</td>
<td>n = 3</td>
</tr>
<tr>
<td>Sporting team</td>
<td></td>
<td>Sporting team</td>
<td>n = 2</td>
</tr>
<tr>
<td>ICT-associated individuals</td>
<td>ICT-associated individuals</td>
<td>Self in virtual space</td>
<td>n = 5</td>
</tr>
<tr>
<td>No ICT association</td>
<td></td>
<td>No ICT identity</td>
<td>n = 10</td>
</tr>
</tbody>
</table>

This forty-five per cent of the study’s population who did not engage with ICT artefacts in social groups contributed to our understanding of the identity of contemporary learners, and challenged the assumption that all children engage with ICT. In seeking to reveal the local reality of ICT-associated social groups, this study has clarified that only some Year Six learners engaged in these groups and that this engagement varied widely in nature and extent and was often limited. For these groups, there was little variation in the objects used, though the nature of engagement varied in the artefacts (processes), purpose, and time engaged with the artefacts. Between social groups, however, there was little variation in membership, learning, location, and preferred non-ICT practices. Further, the evidence suggests that ICT-associated groups are groups reshaped by new tools.

Furthermore, members of the group Self in virtual space engaged in social practices that have the potential to create a new notion of social groups of primary-aged learners. Social practices within groups traditionally and intuitively involve engagement with other people (Perrolle, 1999). Note that the relationship being suggested here is not the same as the use of MSN chat groups and multi-online user groups, as suggested by Prensky (2001). This study provides evidence that some Year Six children engage in solitary practices with ICT. Members of this group interact with the computer as if it provides an individual private world in which there is no need to interact with people in a sense the computer is a people surrogate.

Consequently, in studying the ICT-related social groups to identify identity claims from contemporary commentary, this study found that some children are developing identities related to ICTs but definitely, not all children. Further, new notions of ICT surrogacy are worth further investigation.

Conclusions

In summary, two conclusions in relation to identity became evident from the results of this study. There is a wide range of ICT identities, not one as implied by the literature (see Oblinger, 2003; Prensky, 2001). In this research, multiple groups were identified with different purposes and different social practices. No participant exhibited an identity based solely on ICT or even dominated by them, and more than twenty-five per cent demonstrated no ICT identity. A consequent conclusion is that there are multiple possible ICT identities.

It cannot be claimed that ICT-associated social groups contribute to an identity for all children. The concept of the identity of the contemporary learner as totally immersed in an ICTs-mediated...
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environment is challenged by the significant number of participants in this study who did not engage ICT-based social practices in ICT-associated social groups.

Learners identified particular ICT-associated social practices and groups as having a role in their lives, but they equally recognised the role of non-ICT associated social practices and social groups. Therefore, a combination of social groups, both ICT-associated and non-ICT associated, contributes to the identities of contemporary learners.

Besides engaging with ICT-based processes, the contemporary learner also engages in social groups and social practices that are non-ICT related. Thus, the learner perceives ICT to be available for purposeful use, and ICT-associated social groups as one of many social groups in which to engage. Furthermore, even for those children who rate their participation in these social groups highly, there is a preference for other non ICT-related social practices. Therefore, it could not be claimed that any participant revealed an identity that was solely ICT-mediated.

In the next section, these conclusions are analysed for how they inform our understanding of the contemporary learner.

Implications

These implications place the view of the contemporary learner revealed in this study into the context of learning in the contemporary classroom. This study provides evidence to support the stance that ICT identities have added further identities to the list of identities of primary aged learners. Clearly, though, there are still identities that are derived from non-ICT-associated groups as in the past. Therefore, it can be concluded that the continuum of identities has grown, with the increasing diversity and availability of ICT in social groups. Furthermore, this study provides evidence that does not support the view that the identity of contemporary learners is solely ICT focused.

It cannot be claimed that ICT-associated social groups contribute to an identity for all children. The concept of the identity of the contemporary learner as totally immersed in an ICT-mediated environment is challenged by the significant number of participants in this study who did not engage with ICT-based social practices in ICT-associated social groups.

This section is presented in two sections: ICT identity and the learning environment. The first section, ICT identity discusses the diversity within individuals. The second section, Learning environment outlines some resultant issues for the classroom.

ICT identity

Learners’ ICT identities are varied and complex. They are assumed as a result of engagement in social groups that take different forms with their uses of ICT, and function for different purposes. Therefore, some learner ICT-identities will not be readily visible in the school context, because they are only visible in the social purposes of the social group.

When learners who have developed their own ICT identities find themselves in an ICT-related scenario or activity, they may work in ways that challenge a teacher’s way of working. These challenges may be derived from ICT-associated social practices such as autonomy, collaboration, purpose, active engagement, and exploration (Thrupp, 2008). Consequently, learners may question the ways in which a teacher has designed learning in an ICT environment.

Implication 1: ICT-based classroom activities may not make sense to all learners with an ICT-associated identity.

Implication 2: Learners may look for control, negotiate alternate ways of learning, readily advise other learners, or nominate to investigate independently.
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Implication 3: Learning that occurs away from the school and is not determined by the teacher needs to be visibly recognised and valued in the classroom.

Learning Environment

The use of ICT by Year Six learners is usually quite specific and not all Year Six learners engage with ICT. Those learners who engage with ICT do not necessarily all engage with the same ICT artefacts; and those who engage with the same artefact do not necessarily do so with the same level of interest. Consequently, when designing learning for the classroom that embeds the use of ICT artefacts, teachers need to consider reasons other than learner interest in ICT. These may include the need for workforce readiness or other societal demands (OECD, 2000), but these were beyond the scope of this study. Given this, the following implications are proposed.

Implication 4: Contrary to the claims by some advocates and curriculum documents, when designing learning utilising ICT, teachers cannot assume that all learners have a high level of interest in ICT; but need to identify the individual ICT interests and needs of each learner.

Implication 5: In embedding ICT-based activity in the classroom, teachers need to have a clear purpose for the planned use, and understand how it can achieve the required learning.

In summary, the commentary that is often heard in the community that all children can fix or use anything digital has not been borne out by this study. Rather, some enjoy some ICT practices over which they have control and for which they see a purpose, often personal. Consequently, there are two issues for teachers. Firstly, the assumption that ICT will create the ‘magic’ to motivate all learners is not supported. It is most likely to be the case where learners identify a worthwhile purpose and have some control over choice and direction of engagement with the artefact. Therefore, the pedagogical design for embedding ICT in the classroom for learning is a complex process. A ‘one size fits all” pedagogical design with ICT is as likely to succeed as fail in achieving engagement in learning as is any strategy. Secondly, it is erroneous to assume that one teacher can have the knowledge and skills in all ICT practices in which their learners engage.

Subsequently, with the increased diversity created by ICT social practices, there are two pedagogical practices that may provide some support for teachers. Firstly, teachers need to understand the individual learner’s ICT identity to embed ICT in classroom learning effectively. Teachers need to collect information about these practices from their learners to understand how they are engaged in these practices, the knowledge of ICTs they embed in their practices and the means by which they best learn using them. Secondly, the teacher needs to readily acknowledge ICT practices in social groups of individuals in the class and negotiate classroom ICT practices with learners, thereby, basing classroom practices in the expertise of individual learners who support or lead the learning of other learners. In so doing, the teacher acknowledges that any product can be achieved through the use of many ICT practices. Essentially, the teacher creates an openness that allows peer-peer mentoring and negotiation about the choice of ICT practices.

Conclusion

This exploration of identities associated with ICT suggested that a singular claim about all learners, because they were born at a certain time, is neither possible nor helpful in considerations about learning or the use of ICT in the classroom. The findings of this study are based on a small sample in provincial Queensland, Australia and hence, it is acknowledged that they are limited. However, the implications are worthwhile as the basis of teacher reflections on the nature of the contemporary learner, his/her view of learning, and on the use of ICT in the classroom.
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References


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