Content Integrated Collaborative Learning for Learner Autonomy

Sanjukta Sivakumar
Principal, Delhi Public School Tapi, Surat | Research Scholar (Ph.D), MS University, Vadodara

Corresponding author email: sanjuktask@gmail.com

Article reference:

This paper examines Collaborative Learning (CL) and Content and Language Integrated Learning (CLIL) as learner-centric, tech-friendly and task-based methods facilitating the development of language for analytical and critical thinking, leading to autonomous learning in students. CLIL-CL enables high motivation through peer learning and facilitates autonomy by enhancing language skills for information processing. This paper discusses three groups of learners, who collaboratively created an iBook, computer games and a homemade battery charger as self-initiated extra-curricular projects. The learners applied language-skills for meaning-making as higher-order thinking in content-specific academic contexts. Significantly, although these learners scored average to low grades in English, their use of language in real life was more meaningful, compared to others with higher language grades at school. A case study of these learners was conducted to analyze probable reasons underlying higher-order thinking in real life. The results of this study connected real-life language behaviour with autonomous task-based Content Integrated Collaborative Learning (CICL) at school, based on cognitive challenge and technology inputs. The effects of CICL therefore, reach beyond the classroom to enable language skills for higher-order thinking, problem-solving and learning in real life. This paper outlines how CICL may be integrated with teacher instruction, motivating extra-curricular autonomous learning.

Index Terms: Collaborative Learning, Content and Language Integrated Learning, Higher-order thinking, Learner autonomy, Technology.

1. INTRODUCTION

In response to challenges posed by globalization, learners increasingly engage in critical thinking, problem-solving and decision-making in extra-curricular learning contexts. Integration of Collaborative Learning (CL) and Content and Language Integrated Learning (CLIL) have enabled co-construction of knowledge through an inter-disciplinary, learner-centric, tech-friendly and task-based approach replacing ELT in parts of USA, Canada, Australia and Europe. This integration is called Content Integrated Collaborative Learning (CICL), a term coined by this researcher to describe discursive learning through higher-order thinking with real-life applications. Discourse functions of critical thinking include negotiation, interpretation, discussion, query, negation, suggestion, argument, turn-taking and problem-solving.

2. REVIEW OF THE RELATED LITERATURE

CLIL for learning content subjects in a foreign language originated in 1994, ranging from full immersion (Canada) to partial immersion (Europe, UK, USA). CLIL enabled proficiency in language and cognitive skills by redirecting language
learning strategies to content subjects for interdisciplinary critical thinking (Dalton-Puffer 2008; Coyle et al., 2010). Collaborative discourse as a tool for higher-order thinking (Bakhtin, cited in Haworth, 1999) drew on dialogic learning (Vygotsky, 1986), cultural psychology (Bruner, 1996) and socio-cultural studies (Wertsch et al, 1995).

Peer-learning of cognitive, metacognitive, social and affective strategies led to the integration of CL with CLIL and Task-based Learning (TBT) (Adey and Shayer, 1994). Thinking skills embedded in open-ended CICL tasks enabled learners to impose meaning, take decisions, examine multiple solutions, develop metacognition and accept responsibility for learning (McGuinness, 1999; Marsh et al., 2010). CICL tasks became inter-disciplinary cognitive tools for analytical, critical and creative thinking in content subjects (Lipman, 1988, 2003), through scaffolding and Socratic questioning (Brown and Campione, 1993; Wegerif, 2005).

Emphasis on syllabus coverage in mainstream classrooms, however, led to teacher-talk displacing learner voices and discursive functions of dialogue for CICL (Dillon, 1994; Nystrand et al., 2003). Integrating CLIL-CL with mainstream curriculum, therefore, needs further research, for planning technology-enhanced tasks, generating critical collaborative discourse and engaging diverse learners (Ogden, 2000; Blatchford et al., 2003).

3. RESEARCH METHODOLOGY

The aim of the study is to identify the reason why some learners engage in extra-curricular higher-order thinking. The research question of the present study therefore, is:

- Can CICL be instrumental in extending learning into higher-order thinking in real life?

Answers to the research question are sought through a case study, or an exploratory, descriptive and explanatory analysis of a specific learning event, conducted by the researcher as a non-participant observer, on a study sample consisting of three groups of twelve learners in an English medium CBSE school in Surat. The qualitative case study method is justified in the present instance, although its findings may not be generalised across a range of contexts, because:

1. An intrinsic non-interventional case study method is used to identify how and why learners apply language for higher-order thinking. The number of learners doing so does not affect this objective.
2. The study sample is not large enough for quantitative analysis.

Qualitative data analysis (Lee, 1989) alone therefore, ensures validity of this case study, unimpaired by the absence of quantitative data.

The researcher, in her role as school principal, observed groups of secondary school students, especially those scoring average or low grades in English, frequently collaborating in autonomous learning through higher-order thinking outside the prescribed curriculum. The school practiced CICL, with English and content-subject teachers collaboratively framing tasks with integrated language and content learning outcomes matching the cognitive dimension of Revised Bloom’s Taxonomy (RBT) (Anderson and Krathwohl, 2001). This case study analyses probable causative connections between the CICL instructional method and autonomous learning through higher-order thinking in real life.
The twelve C-D grade language learners of the study sample constituted three groups, referred to as they called themselves:

- **Authors** (five members) wrote a digital iBook
- **Gamers** (four members) designed computer games
- **Inventors** (three members) created a battery charger-cum-torch

Qualitative data on the above groups was collected over one week through:

- Video-recorded interviews of learners, based on a questionnaire (Appendix)
- Report from science teacher evaluating content knowledge and thinking skills demonstrated in class
- Report from English teacher on language use for cognitive thinking

The above qualitative data is examined against criteria of critical thinking cited by Lipman (2003) and measured on the RBT scale of higher-order thinking as Analysis-Evaluation-Creativity. Triangulation of this qualitative data on language use for higher-order thinking is based on:

1. Learner interviews
2. English teacher report
3. Science teacher report

A positive hypothesis would be verified by data triangulation if qualitative data from all three above sources indicated that CICL in the classroom motivated learners to use language for higher-order thinking in real life.

## 3. RESULTS OF THE STUDY

The results of this case study are presented in three categories for triangulation:

1. **Qualitative Data from Learner Interviews**: An analysis of excerpts from interview-transcripts is presented below (Table-1), indicating ten features of critical thinking (Lipman 2003) at three RBT levels of higher-order cognition by the Inventors, Authors and Gamers:

<table>
<thead>
<tr>
<th>Critical Thinking</th>
<th>RBT-1: Analysis</th>
<th>RBT-2: Evaluation</th>
<th>RBT-3: Creativity</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Estimating</td>
<td><strong>Inventors</strong>: we shared pocket money to buy some machine parts</td>
<td><strong>Authors</strong>: We all work very hard, equally, but not same. We have to see what each one is good at, and then make the whole work from all the parts.</td>
<td><strong>Inventors</strong>: and then we recycle waste things from home</td>
</tr>
<tr>
<td>2. Self-correction</td>
<td><strong>Gamers</strong>: We made many mistakes, confusing word meanings, we corrected programme</td>
<td><strong>Inventors</strong>: we tested the voltage in the lab meter, problem-shooting till it works</td>
<td><strong>Inventors</strong>: burning fuels pollutes, so may be next time, we will use steam?</td>
</tr>
<tr>
<td>3. Classifying</td>
<td><strong>Gamers</strong>: used logic for programming, and technical animation for visual and sound effects</td>
<td><strong>Gamers</strong>: some, some Hindi but finally, English, [laughs] also computer language... C++ is more difficult than English.</td>
<td><strong>Authors</strong>: I am a good learner but better outside the classroom [laughs]</td>
</tr>
<tr>
<td>4. Assuming</td>
<td><strong>Authors</strong>: we listen to each other's ideas to learn</td>
<td><strong>Inventors</strong>: This is more applicable than exam grades</td>
<td><strong>Authors</strong>: This iBook will help dyslexic learners with interactive graphics</td>
</tr>
<tr>
<td>5. Logical inference</td>
<td><strong>Gamers</strong>: we can also make computer games...compatible with our devices, as we do programming at school</td>
<td><strong>Gamers</strong>: If we are not happy with English grades, we can still use it for learning useful things</td>
<td><strong>Inventors</strong>: If we have our own website, then in future, everyone...in other countries can share our products - for free</td>
</tr>
<tr>
<td>6. Grasping principles</td>
<td><strong>Inventors</strong>: We did electric circuits in class</td>
<td><strong>Authors</strong>: Combining Final-cut Pro with iBooks and Google Maps – it was challenging but very effective, also exciting!</td>
<td><strong>Gamers</strong>: can't apply the concepts directly, so we make up our own ideas</td>
</tr>
<tr>
<td>7. Noting relations</td>
<td><strong>Inventors</strong>: Technology and Internet helps us, in class and also on our own</td>
<td><strong>Authors</strong>: It had to have good information, but in a story, so everyone can understand and it is interesting also</td>
<td><strong>Gamers</strong>: We embedded visual-spatial graphics in text, or character ideograms in programmes</td>
</tr>
<tr>
<td>8. Hypothesizing</td>
<td><strong>Gamers</strong>: In class, we learn for exams and then the grades are not so good, but we can still learn without grades</td>
<td><strong>Authors</strong>: Text can be helped if interesting visuals and actions are also there</td>
<td><strong>Authors</strong>: We went on an experiential field trip to Adani Port [in Surat]...so...we decided to make an iBook</td>
</tr>
<tr>
<td>9. Context sensitivity</td>
<td><strong>Authors</strong>: we used same class groups formed with sociogram</td>
<td><strong>Inventors</strong>: If you are camping in the forest...no electricity...this is a torch and can charge your mobile also.</td>
<td><strong>Authors</strong>: adding the visuals, interactive sections, graphics, maps, and combining all this inside the text</td>
</tr>
<tr>
<td>10. Autonomy</td>
<td><strong>Inventors</strong>: We all had fun learning from the Internet.</td>
<td><strong>Gamers</strong>: we had to check, discuss and correct it ourselves.</td>
<td><strong>Authors</strong>: We feel proud to do it ourselves, entirely.</td>
</tr>
</tbody>
</table>

Table-1: Qualitative Analysis of Excerpts from Learner Interview Transcripts
Critical higher-order thinking is evident in language used for real-life innovative learning, which is described by learners as challenging, application-oriented and meaning-focused (Table-1). Learners expressed satisfaction with autonomous learning from varied extra-curricular sources, connecting this with CICL in the classroom and using it to counter unsatisfactory academic grades. They wished to interact with a global learning community, indicating thinking on a larger scale than that encompassed by curricular objectives.

1. **Qualitative Data from English Teacher Reports:** English teacher reports on language use by learners in class highlighted:

- Collaborative discourse of shared responsibility for learning, tolerance of differences, peer-learning strategies, peer feedback and cognitive thinking
- Average to high range of communicative fluency, but low to average performance in language accuracy, with frequent circumlocution, query, coinage, code-switching and pauses
- Frequent reference to thinking, analysis, self-correction and critical learning

2. **Qualitative Data from Science Teacher Reports:** Subject teacher reports evaluated the quality of thinking manifested by the learners in class:

- Collaborative, divergent and independent problem-solving
- Critical thinking levels beyond curricular cognitive objectives
- Innovative use of technology and online texts and discourse for class projects
- High self-esteem, intellectual curiosity and motivation

High levels of critical and creative thinking attained by learners was thus verified by triangulating the qualitative evidence from learner interviews with qualitative evidence from the English teacher and Science teacher reports.

**5. CONCLUSION**

Triangulation of data proves a positive hypothesis in response to the research question that CICL in the classroom can extend to higher-order thinking for autonomous learning in real life. Learner motivation for higher-order thinking is verified by teacher reports that despite scoring low or average language grades, these learners used language for higher-order thinking beyond syllabus objectives. This indicates that higher-order thinking for CICL in the classroom can be autonomously replicated by learners in real life.

**6. RECOMMENDATIONS**

It is therefore, proposed that teacher instruction should integrate CICL to motivate discourse for higher-order thinking in real life contexts. Three basic features of CICL are suggested:

1. Tasks integrating language skills with technology and content from other subjects
2. Task outcomes linking critical discourse functions (Lipman 2003) with RBT higher-order cognitive processing
3. Time for peer-learning, feedback and individual reflection
The resulting learner autonomy may increase the scope of learning beyond conventional curricular objectives of communicative fluency and accuracy to include discourse efficacy for higher-order thinking.

References


Appendix: Interview Questionnaire

1. How did you first think of creating a computer game / power-pot battery charger / an iBook?
2. How did you form a group to create your product?
3. Did all group members play an equal role?
4. How did you decide the role of each group member?
5. In what language did you communicate with group members?
6. Describe (in detail) how you created your product.
7. What problems did you face in the process, and how did you solve these?
8. How will your product be useful and to whom?
9. What language skills, higher-order thinking skills and collaboration skills have you learnt during this project?
10. Describe your feelings throughout the project.
11. Was the project more enjoyable than your usual syllabus learning?
12. Do you think the syllabus can be learnt better through such projects?
13. Do you consider yourself a good learner or an average learner?
14. Do you have anything further to share about your project?
Authors’ Bio

Sanjukta Sivakumar is the principal of Delhi Public School Tapi, in Surat, Gujarat. She has taught English literature at graduate and post-graduate levels and language at school level, and conducted ELT workshops for teachers in different parts of India. She has recently submitted her Ph.D. thesis.