
Engaging Internationally Diverse Students by Integrating the Teaching of Reading and Writing and Using Writing via ICT Tools for Assessment

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Abstract: This study developed a model that integrated the teaching of reading and writing and used writing via information and communication technology (ICT) tools for assessment to engage internationally diverse students. A 2-year action study was conducted for internationally diverse students participating in a teacher-training course. Qualitative and quantitative data analysis revealed that the proposed teaching model could engage internationally diverse students and raise a learning instructor beyond the local culture. The model provided a framework for instructor–student social negotiation and opened space for uncertainty. The design, writing via ICT for assessment, promoted a learning community in which additional diverse ICT tools were eventually incorporated into the model. Students from different international backgrounds exhibited slight differences in their behaviors as the proposed model was implemented; generating the most challenges in the short term, newly arrived international (exchange) students presented the greatest opportunities for improving the proposed teaching model.

Keywords: writing–reading integration, mental process, ICT, teacher action research.

INTRODUCTION

Engaging students from internationally diverse backgrounds has become a challenge for instructors in higher education because of increasing worldwide trends in globalisation, educational mobility, and a demand for cross-disciplinary competence [1]. As a teacher educator and an academic in learning and instruction, I am interested in investigating innovative teaching approaches for engaging internationally diverse students in my discipline [2]. My Chinese cultural heritage is influenced by Confucianism, in which teachers are considered to be knowledge authorities but are expected to deliver instruction tailored to diverse students and to be moral models [3]. The seeming dilemma confronting Chinese teachers between transmitting knowledge and engaging diverse students was well documented in a saying by Han Yu, a Confucian scholar in the Tang Dynasty (AD 768–824), ‘Those who wanted to learn would need a teacher, one who could convey wisdom, teach professional knowledge, and guide students in facing problems’ [4].

This background led me to conduct a 2-year action study to develop, implement, and refine a teaching model that could be open enough to engage internationally diverse students enrolled in a teacher-training course. The teaching model was developed on the basis of research on reading as information processing and writing via information and communication technology (ICT) tools as formative and

summative assessments. Like most teachers, I consider subject-matter content and pedagogy before considering ICT, with ICT playing a catalyst role in change and linking to the outside world [5]. The story of developing, implementing, and improving this teaching model is expected to benefit higher education practitioners, preservice educators, and teacher educators as they teach international students.

International Classrooms and Action Research

Teaching can be viewed as transmitting knowledge or supporting student learning [6]. The challenges of knowledge transmission in an international classroom may include the inevitability of reproducing the local culture, English as a constraint condition that is perceived by students in diverse ways, and limited curricular teaching and learning support. In supporting student learning, an international classroom offers renegotiation opportunities between local and global cultures and broadens knowledge and social relationships through sources, distribution, and reconstruction [7].

Instructors have the mission of providing high quality to all students; however, instructor workloads have been increasing to satisfy accountability requirements, curriculum reform, and a rapidly changing global society [8]. Action research provides a natural, systematic, practical, innovative, and effective measure for fulfilling the mission and the demands of

educational practice and knowledge, [9]. The results of action research can provide example experiences and teaching designs that enable instructors in higher education to meet the challenge of frequent educational mobility and to extend pedagogical knowledge [10].

Teaching by Reading as Information Processing

Student learning may mimic a reading process, which invites knowledge reception and reconstruction and may be designed as a student-centred teaching process. Reading is a cognitive function and comprises the process of selecting, organising, and integrating (SOI) for knowledge construction [11]. A revised attention–selection–organisation–integration monitoring (ASOIM) model for teaching students to read by using a computer has proved to be an effective method for improving student reading abilities [12].

Teaching by Writing via ICT Tools as Assessment

A classroom that engages students in reading and listening tends to entail a conservative approach to teaching, whereas one that engages students in writing and speaking tends to entail a liberal approach, inviting students to dialogue with other students, articles, and readers (instructors and students), thus increasing opportunities for feedback [13]. Journal or essay writing is representative of student cognitive, metacognitive, or self-regulated ability in knowledge acquisition, inquiry, and construction and serves as a valuable formative assessment for instructors as they support student learning [14]. A teaching model in higher education that considers student career development must invite students to develop a comprehensive ability to write, speak, read, and listen, thereby linking to the authentic, vocational world outside the classroom.

ICT is a convenient tool for using writing as a teaching or assessment method in supportive learning [15]. Writing via ICT tools (e.g., wiki) provides a natural platform on which to promote multiple student competencies including ICT skills, organisation, collaboration, teaching with ICT, and assessment [16].

Research Questions

1. How should the proposed teaching model, which integrates the teaching of reading and writing, be changed to engage internationally diverse students?
2. How does the assessment design (i.e., students writing via ICT tools to assess the learning process and outcomes of students and the teaching model) change to engage internationally diverse students?
3. What are the similarities and differences among students from internationally diverse backgrounds in response to the teaching model with writing via ICT tools for assessment?
4. What are students' course evaluations?

METHOD

Participants

The participants were students actively participating in the first 2 years of a teacher-training course with instruction designed for senior student teachers (Year 3 and above) in a university in Taiwan. This study reports results from eight students in Year 1 and seven in Year 2. Among the 15 students, eight were exchange students (1–2 semesters), three were foreign students (full time), and four were Taiwanese students (full time). The international (exchange or foreign) students were from Africa, the Americas, Asia, and Europe. Four international students said that they had two to three nationalities or cultural backgrounds. Nine international students had European backgrounds.

The four Taiwanese students studied education, and the 11 international students studied commerce, mass communication, or law. According to what the international students expressed in class, they enrolled in the course because it was taught in English and because they were interested in teaching or education, although they did not anticipate becoming school teachers. English being the official language of the course in the first 2 years might explain why few Taiwanese students enrolled. In Year 3, the course was taught in Chinese, which resulted in registered students with Taiwanese or Chinese backgrounds except for one foreign student.

Teaching and Assessment Designs

The course was part of a teacher-training course and aimed to cultivate in future teachers the ability to design (create), implement, assess, and improve teaching. Because the official course language was English and it tended to attract international students to the university, a selecting–organising–integrating–producing (SOIP) model that integrated the teaching of reading and writing was designed to engage students from internationally diverse backgrounds (Table 1).

The SOIP model was developed on the basis of Mayer's [11] SOI model for reading as knowledge construction, which included the teaching materials on learning and instruction (from motivation, cognition, to assessment) and ended with project-based learning (research and essay writing) [17]. The SOIP model uses writing via ICT tools as formative and summative assessments for monitoring student progress, understanding student difficulties to provide timely support, and recording student learning outcomes (Figure 1). To facilitate student writing, all the writing assignments were introduced with templates in the first class of the course and emphasised that the assessment criteria were based on the students' teaching designs, ideas, and content rather than on the quality of their English or word counts [18].

Data Collection and Measures

This 2-year action study was conducted to gradually improve the proposed teaching model (Table 1) [19, 20]. Three sets of data—student writing, instructor records, and university course evaluations—were collected as measures for assessing teaching

effectiveness, providing teaching insights, and improving the proposed teaching model. The measures were a type of digital portfolio that offered benefits for student assessment, student engagement, data validity, data multiplicity, data efficiency, and the evaluation of long-term pedagogical effects [21].

Table 1: Integrated Teaching of Reading and Writing Model (With Writing via ICT Tools for Assessment)

Mental procedure	Teaching (reading) materials	Teaching methods	Writing via ICT tools for assessment
Selecting	Attitudes or motivation Creative thinking Learning strategies	Lectures Discussion led by the instructor and students Online support Learning management system via Moodle	Google Slides: Mind map or concept Google Docs 1: Weekly journal Facebook: Interaction
Organising	Critical thinking Cooperative learning Reflective teaching (constructivism and assessment)	Same as above	Google Docs 2: Midterm essay (initial research designs and completion)
Integrating	Research design Data collection	Lectures Discussion Online support	Google Slides: Oral presentation for midterm essay Written, audio, or video records: Student-made assessment for teaching experiments
Producing	Data analysis Essay structure	Same as above	Google Slides: Oral presentation for term essay Google Docs 2: Term essay (completion)

Student writing

The design comprising writing via ICT tools (e.g., Google Drive, Moodle, and Facebook) for assessment (Table 1; Figure 1) created the possibility of concretely recording student work progress, reflections, peer

assessment or interaction, and teaching activities throughout the course [22-24]. The data provided information that facilitated the prompt timing of instructor support for student learning and proved concrete for objective analysis in this study.

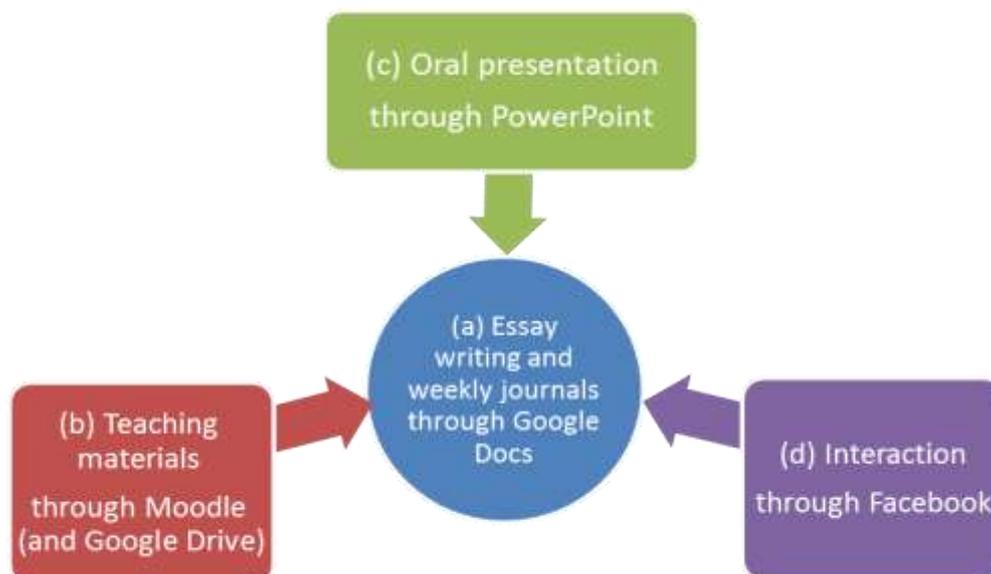


Fig-1: An assessment perspective of ICT use for teaching and learning

Instructor records

With the consent of the students, classroom activities were sometimes audio recorded as the instructor's computer screen was simultaneously video recorded by using PowerCam software. The instructor and the teaching assistant maintained field notes and classroom records that were based on participant observations, reflections, and discussions with the students in the classroom and in private [25].

University course evaluations

An online survey was circulated to all the students through the university computer system at the end of each semester to allow the students to share their perceptions of each course in which they participated. The students could choose whether to complete the survey. The university provided the course evaluation results (excluding any student identification) to the instructors of the courses. The survey included ten 5-point items based on a Likert-type scale (1 = *strongly disagree* to 5 = *strongly agree*) that measured student satisfaction with the teaching quality, such as teaching materials, teaching methods, assessment methods, and instructor–student interaction; eight 2-point items (1 = yes; 0 = no) on advantages of the teaching, such as clear teaching objectives, motivating students, using updated teaching materials, and encouraging independent thinking in students; eleven 2-point items (1 = yes; 0 = no) on suggestions for improving the teaching, such as being punctual, avoiding irrelevant topics, impartial arguments, increasing deeper content, and avoiding gender and ethnic bias; and one open-ended question, on which students could write anything that they wished to convey to the instructors.

The measures, similar to products in the portfolio assessment, were collected over the first 2 years of the course to continually improve the proposed teaching model (Table 1; Figure 1) and teaching practices. Student-centred teaching, multiple sources of data, and instructors' critical self-reflections were used to collect student opinions, adjust the proposed teaching model, and increase social justice in an internationally diverse classroom [26]. The study satisfied the ethical criteria of teaching research without requiring the approval of the ethical committee: all students were adults (>20 years); all data were naturally generated or included in a general teaching, assessment, and evaluation environment for improving teaching skills, evaluating student performance, and evaluating teaching effects (Official Document 1040003540 issued by the Ministry

of Science and Technology, Taiwan). In addition, this paper included only summative descriptions of student voices excluding any student identification.

Data Analysis

The data analysis methods of action research were similar to those of qualitative and quantitative research [27]. The qualitative part of the analysis focused on what had changed and what the reasons for the change were. The quantitative part of the analysis focused on percentages (frequencies), times, and the means generated anonymously by the students on the university course evaluations.

Multiple data and frames

Different data and conceptual frames were used to understand a particular phenomenon. For example, student writing, class discussion, and field notes were used to assess the need for change and to record what was changed in the proposed teaching model (Figure 1). This method was used throughout the data collection and analysis process for answering all research questions.

Qualitative data analysis

Patterns were identified across and within all data sets, which formed the major results of this study. For example, the major, distinctive themes of the changes were identified in the proposed teaching model (Figure 1).

Quantitative data analysis

The baseline data were compared with the changing data. For example, student evaluations from Years 1 and 2 were compared, which provided evidence of the effects of changes made through this action research.

RESULTS

From a Teaching Model Based on Information Processing to One Centred on Student-Centred Social Negotiation

During the teaching, the initial SOIP model (Table 1), which was based on information processing, was gradually transformed into an SOIP model centred on student-centred social negotiation (Figure 2). 'Social negotiation', particularly between instructors and students, is not the general practice in a traditional classroom in Taiwan; however, it became the general practice in the internationally diverse classroom of this study.

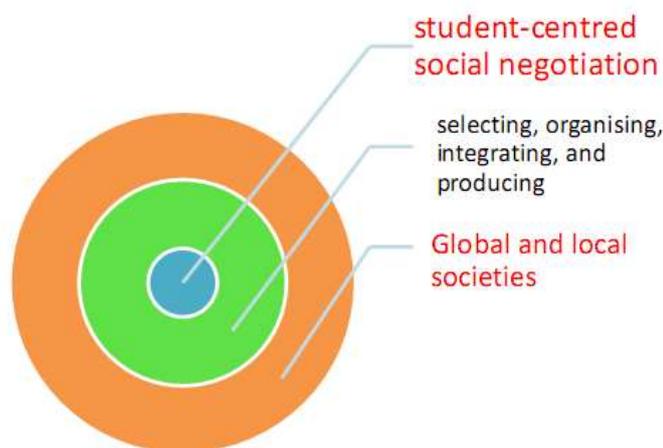


Fig-2: An SOIP model centred on student-centred social negotiation

Low ability to respond to exchange students' strong negative feedback

Taiwanese students are generally quiet in class and tend to follow instructor instructions or designs. In this international classroom, most exchange students tended to frequently and directly express their opinions or feedback, including disagreement with my teaching, such as the following:

I disagree with... I just don't like... (Exchange Student 1 in Year 1)

You said that... How can I trust? I just don't trust... (Exchange Student 2 in Year 2)

After negative feedback, I would follow up and asked students detailed information about their feedback and asked for other students' opinions. This type of statement and classroom climate shocked the Taiwanese students. After class, some Taiwanese students would come to me, trying to comfort or encourage me by offering a smile or a slightly angry complaint.

They were a bit impolite... Are you all right? ... (Taiwanese Student 1 in Year 1)

They should not do this. After all, you are the instructor of the class. (Taiwanese Student 2 in Year 2)

This response might also suggest my lack of ability to respond to the negative feedback in class. I had no choice but to keep calm, try to smile, and answer the Taiwanese students in the following manner:

I was shocked at first and did not know how to deal with this in the moment. But, it's fine. It's my job. I have to think. ... I'd rather that they tell me directly. It's what I have to face and deal with. I have studied abroad in a Western country.

Strong debates and arguments in class are not new to me. (Instructor in Years 1 and 2)

Although responding this way, I found that generally I could not immediately change my teaching methods in response to strong negative feedback from an exchange student in the class. The changes were made subsequently, over the next 1–2 weeks and beyond.

Changing students from outliers to followers of topics or methodology choices

In implementing the model (Table 1), I found myself identifying students as followers or outliers and endeavoured to increase followers and decrease outliers. I hoped that students would conduct a teaching experiment, using their classmates as their students, and complete an essay on their teaching experiment, which would fulfil the aim of the course. The percentage of students choosing an essay topic related to this course (i.e., creative thinking) or education were 50% (= 4/8) in Year 1 and 71% (= 5/7) in Year 2. The percentage of students choosing a teaching experiment as a data collection method were 25% (= 2/8) in Year 1 and 43% (= 3/7) in Year 2. The major method that I used to increase the number of followers in Year 2 was to clearly explain the course to students at the beginning of the course:

This course is for teacher training. As such, I hope that a teaching experiment will be the preferred methodology. However, if teaching experiments are too difficult and becoming a teacher is not your future career expectation, a 'focus group discussion' is the best alternative methodology. This is because a focus group discussion emphasises inviting participants' opinions, similar to conducting a student-centred discussion in class. You can teach any topic in your field of interest (e.g., commerce) and invite your classmates to provide their opinions. But,

remember to feed students some knowledge before the focus group discussion if you find that your students (classmates) have little prior knowledge. Considering student prior knowledge before your teaching is a good teaching practice. (Instructor in Year 2)

All five students (two exchange, two international, and one Taiwanese student) choosing to conduct teaching experiments in class examined the effectiveness of certain teaching methods such as creative thinking, thinking styles, and ICT use in education, which completely fit the aim of the course. An interesting phenomenon was that all five students choose their own native language or culture as the teaching material, which matched the classroom being an international classroom.

Most students, even Taiwanese students, did not choose to conduct teaching experiments. A teaching experiment appeared to be a challenge for the students, particularly in an international classroom where they had to teach using English instead of their native language.

Frequent and slight changes in the whole teaching process

The teaching design of the model (Table 1) changed almost each week in Year 1. The aim of engaging internationally diverse students heightened uncertainty in the teaching process and increased the teaching workload. The students generally respected my initial teaching design and aimed to fit into the course. Exchange students were especially salient in expressing this in the first class.

If I choose this course, I will try to fit into your design for the course. (Several exchange students in Years 1 and 2)

However, I aimed to improve the design by reflecting on student responses. Because of a concern about the students being from diverse fields or domains of study, I discussed cases in the field of education but also discussed those in other fields. For example, hoping that the students would provide me with feedback via the weekly journal, I said:

As a instructor, I need to improve my teaching, which is one way to facilitate instructor

professional development. This is just like in business or other professional fields, where you will need to understand how satisfied your customers are with your products or services (Instructor in Years 1 and 2).

From Assessment to Constructivist Perspective of ICT Tool Use

As the students followed the initial SOIP model (Table 1), which integrates the teaching of reading and writing, I followed the students' work because their difficulties and reflections throughout the teaching process could be clearly and 'visually' observed in the assessments via ICT tools (e.g., weekly journals and essays via Google Docs). By having them write via ICT tools for assessment, I also faced strong challenges from the students. The challenges seemed easy to resolve from the perspective of the students, as I accepted alternative ICT tool use by the students and increased assessment transparency, but seemed difficult to resolve from the perspective of the instructor, as I had to continue learning new ICT tools throughout the course.

Incorporating alternative student ICT tools and emphasising the most important ICT tool

I wished to monitor student progress by having them write via ICT tools for assessment. The ICT tools predetermined and used by me in Year 1 were Google Docs, Google Slides, Facebook, and Moodle (Figure 1). Although none of the students had used Google Docs or Google Slides, I found that the students in Year 1 generally learned the instructor-predetermined ICT tools quickly. Some students, however, used different ICT tools (e.g., Microsoft Word® and Microsoft PowerPoint®). At first, I viewed their alternative ICT tool use as 'destructive', viewing them as not fully engaging in the course. Subsequently, alternative student ICT tools were treated as true 'alternatives' and accepted in the course. I changed because I found it too difficult to change the students' ICT use habits.

In Year 2, I emphasised using Google Docs for essays and the weekly journal assignment because I had to check the students' progress frequently for formative assessments. Moodle was not used because using Google Drive with Facebook could fully replace Moodle. Incorporating alternative student ICT tools and emphasising Google Docs facilitated changing from the tools used in Year 1 (Figure 1) to those used in Year 2 (Figure 3(a-d)).

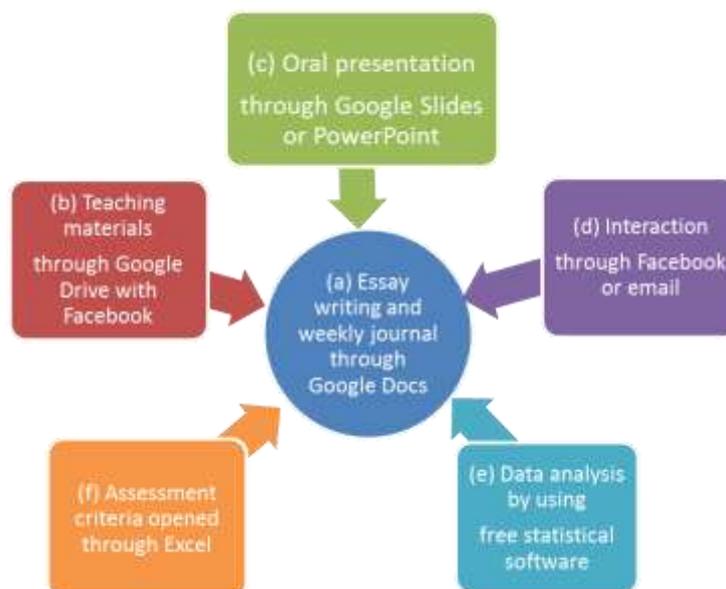


Fig-3: A constructivist perspective of ICT use for a learning community and assessment

Learning new, advanced ICT tools

As the students followed my teaching plan, I discovered that they led me to learn. The students introduced me to advanced ICT tools (e.g., EndNote® and PSPP). A serious problem I faced was that the exchange students could not access commercial software packages provided by the university. For example, an exchange student who required a data analysis tool could not access the full version of SPSS but was relegated to using the trial version of SPSS, the free version of PSPP, or the free version of R Project. I had never heard of or used PSPP and had heard of R Project but never used it until Year 1 of the course. I introduced students to Microsoft Excel® for performing simple data analysis or to MOOCs (e.g., Coursera) for learning advanced ICT tools used in statistical analysis. However, I still had to teach some students who needed to perform data analysis how to use the tools because learning them from MOOCs required too much time. Therefore, data analysis tools were added as an additional ICT tool for assessment (Figure 3(e)) when they had not been included in the original design (Figure 1).

I discovered that I could learn the data analysis tools (e.g., PSPP and R Project) more quickly than the students could, but not the other advanced ICT tools (e.g., EndNote®). This was possibly because, compared with the students, I had more experience and expertise in statistics and more time to prepare or study for the course. It amazed me that the students could learn most advanced ICT tools more quickly than I could; I was the instructor and supposed to be the most capable person in the class. This insight surfaced in my field notes: 'Only expertise-based ICT tools (e.g., PSPP and R Project) stood by my side' (Instructor).

Increasing assessment transparency

The short-term exchange students followed the assessment policies of their respective universities in their own countries, whereas the full-time foreign and Taiwanese students followed the university's assessment policy, which was also the general policy throughout Taiwan. After discussion with the students, I determined two major differences between the exchange students and the full-time students:

- (a) Attendance is a basic criterion of grades in Taiwan but not in most exchange students' countries, where grades are generally dependent on essay or test results. In addition, providing notice to an instructor before an absence is required in Taiwan but not in most exchange students' countries.
- (b) Exchange students aimed to obtain course credit with a passing score, whereas foreign and Taiwanese students aimed to obtain the highest grade possible. In other words, the goal of most exchange students was to obtain a passing score with the least attendance. Some exchange students asked me several times about my method for calculating the grades.

In the middle of Year 2, I decided to provide students with a Microsoft Excel® file that showed my grade calculation methods, including how each attendance, with or without providing prior notice, contributed to the grade; this had never been my practice in past teaching experiences. This additional ICT tool use increased 'assessment transparency' (Figure 3(f)). This assessment transparency was an effective policy, one that I have included in all of my subsequent undergraduate courses. The policy was appreciated by the students, including the Taiwanese

students: 'It [providing students with details on my grade calculation methods] was a good practice and should have been done before' (Taiwanese student in Year 3 of the course). This story provided me three reflections in my field notes:

(a) I had the misconception that only Chinese or Taiwanese cultures emphasised grades as a concrete representation of virtue [28]. (b) A real phenomenon was that different assessment designs were linked to different student behaviors and cultural backgrounds. (c) An anomaly (exchange students' assessment policies) led to assessment transparency and cultural betterment (Instructor).

Differences Between Exchange, Foreign, and Taiwanese Students

Most exchange, foreign, and Taiwanese students paid attention to assessments and needed instructor encouragement to create or present things. The exchange students attended classes as frequently as the other students and performed as well when they aimed to attain a high score and participated in the major course task of examining teaching experiments. The backgrounds of the three groups of students differed slightly regarding certain aspects of selecting, organising, integrating and producing (i.e., SOIP model) (Table 2).

Exchange students

The most critical characteristic of the exchange students was the enormous variation in their responses to the course. Some chose and shared essay topics quickly and some slowly. They relied on diverse literature tools and resources from their universities in their own countries. Some wrote and some did not write the weekly journal reflection. Some followed and some did not follow the prescribed essay structure. The exchange students also shared some common characteristics: They were generally confident in expressing their own ideas in writing, quickly writing once they started, and tended not to change their essay topics once they decided. The quality of their essays was generally satisfactory, with slight differences in their English usage according to their native language (e.g., referring to English as 'she'). One semester appeared to be too short for the exchange students to understand the local culture and to use resources from the local culture. At the end of the course in Year 1, an exchange student stated in class:

Visiting here caused 'cultural shock'. Taiwanese culture is different from mine and the other 'foreign countries' I visited before [in Europe or Africa]. I need additional months here to understand the culture better. (An exchange student from Europe)

Foreign students

The foreign students excelled the most in the class, adapting to the course quickly and performing well regarding most aspects of the SOIP model. They quickly decided and shared their essay topics, with the topics remaining unchanged after their decision, which showed determination and persistence to complete a self-chosen topic. They quickly used appropriate literature sources, actively and confidently presenting their ideas to the class on time. The quality of their essays was excellent with fluent English and few mistakes. The only not-so-perfect aspect of their performance was that not every foreign student was devoted to writing the weekly journal reflection; however, if they chose to write it, they did a superior job. The foreign students were possibly the best students in the international classroom because they had studied in the university for at least 2–3 years, had adapted to the local culture, and used English in a non-English culture more effectively than the other students did.

Taiwanese students

The Taiwanese students were hesitant learners in the class. They chose and shared their topics slowly and changed their topics several times. They used the literature slowly. They also hesitated to present ideas in class, generally requiring an invitation from the instructor to generate enough confidence. They followed the prescribed essay structure but worried about grammar and spelling errors and whether the quality and informative content were acceptable; this appeared to reduce the speed of their essay writing. The Taiwanese students appeared to actively share reflections, expressing their concerns and thoughts in their weekly journals, conveying reflections to me in private or on Facebook, and communicating reflections to the class. These results are consistent with the literature, which reports that Chinese culture emphasises reflection but that ethnic Chinese are shy when speaking in public, a phenomenon known as 'saving face' [28].

Table 2: Differences Between Exchange, Foreign, and Taiwanese Students

	Exchange students	Foreign students	Taiwanese students
<i>Selecting 1:</i> Choosing essay topics	Quick or slow and unchanging (Weeks 2–5)	Quick and unchanging (Week 2)	Slow and changing (Weeks 2–5)
<i>Selecting 2:</i> Sharing essay topics on Facebook	Weeks 3–6	Quick (Week 3)	Slow (Week 5)
<i>Organising 1:</i> Using literature	Slow use of literature	Quick use of literature	Slow use of literature
<i>Organising 2:</i> Reflecting	Some write reflections and some do not.	Some write reflections and some do not.	Most write reflections.
<i>Integrating:</i> Presenting ideas	Quickly and actively present ideas in class	Actively present ideas in class	Hesitate to present ideas; generally require instructor’s invitation
<i>Producing:</i> Writing essays	Quick writers Some follow a prescribed essay structure and some do not.	Quick writers Follow a prescribed essay structure	Slow writers; worry about grammar and spelling errors Follow a prescribed essay structure

Student Course Evaluations

Students generally provided favourable evaluations of Years 1 and 2 of the course when surveyed by the university. The average assessment scores provided by the students for the course were 4.47 for Year 1 and 4.70 for Year 2 (score range = 1 to 5). All eight 2-point items on the advantages of teaching were acknowledged by some students in Years 1 and 2; however, only two suggestions for teaching improvements were provided by students in Year 1, and no suggestions were offered by students in Year 2. Only a single student in each year completed the open-ended question:

A very rewarding course, not only had the opportunity to talk, discuss, and learn how to write an essay but also to learn concepts of instructional psychology. (Anonymous student on university course evaluation for Year 1)

[I can] clearly feel the instructor’s kindness, expertise and willingness to address student issues. Thanks to the instructor for spending so much time and brainpower on solving my problems... (Anonymous student on university course evaluation for Year 2)

A note to make is that student course evaluation appeared to be fair and objective because the evaluation was managed by a third-party authority (the university) and the evaluation results were provided to the instructor with anonymous students. However, personally I doubted the effectiveness of the evaluation in improving learning outcomes or teaching effectiveness as an authentic assessment because it provided insufficient data for improving teaching and small portions of students could determine the evaluation outcome, given that students could choose not to fill in the survey. I used the student course evaluation data here mainly based on the methodology concern of action research in using mixed or multiple

data provided by the context and a instructor’s job of listening to student voices from multiple sources. In other words, I valued action research more than student course evaluation in improving teaching in higher education.

DISCUSSION

Becoming a Instructor who Learns Beyond the Local Culture

The course received desirable evaluations from the students of both Years 1 and 2, with a much higher evaluation in Year 2. The higher evaluation possibly resulted from our having originally used the initial SOIP model design. The model integrates reading and writing, uses writing via ICT tools for assessment, and implements action research in an international classroom. In addition, it promotes equal status among instructors and students and uses action research to facilitate change, with internationally diverse students pushing the teaching beyond the local culture and towards a model of teaching that fits diverse cultures and possibly exhibits longer relevance.

This research benefitted a instructor in a Chinese culture by resolving the instructor dilemma between knowledge transmission and tailored instruction and facilitating a higher standard of teaching [3]. Instructors as authorities in the classroom are a significant tradition in Chinese Confucian culture. The instructors must learn first and then teach ‘some things’ to the students. Involving international students in the classroom increases the speed at which instructors descend from the lectern to sit with the students.

The challenges of the international classroom, particularly those from exchange students, weaken perceptions of the instructor being the authority in the classroom. Social negotiation appears to increase the instructor’s professional dilemma and the psychosocial challenge: whether to fit the aim of the course or to fit

the internationally diverse students. Using ICT tools for assessment promotes a learning community in which students move beyond instructor expertise and update instructors regarding the outside world. Only instructor expertise can win in the learning battle with ICT tools, which challenges university instructors' ability to learn quickly and continually.

Psychosocial Challenges from Social Negotiation via an Open Teaching Model

The initial SOIP model, which is based on information processing and integrates reading and writing, serves as a standard for social dialogue and negotiation. Social negotiation shows slow instructor responses to feedback in student exchanges and the effect of the instructor on diverting students towards desirable essay topics and methodology choices to achieve the aim of the course. Such negotiations in this course resulted in frequent changes being made to the initial teaching design that was based on the proposed model (Table 1).

Social negotiation opens space for uncertainty in knowledge, the teaching process, and power distribution in an international classroom, which inevitably creates psychosocial challenges for instructors [29]. Teaching could be viewed as a cherished burden for instructors in higher education if more emphasis was placed on interpersonal relationships between instructors and students rather than on knowledge.

Ability Challenges from a Learning Community via Massive ICT Tool Use

Student writing via ICT tools for assessment can provide instructors with visible formative and summative assessment information for the students throughout the teaching process, which shifts the teaching paradigm from instructor-centred assessment to student-centred constructivism (i.e., a student-instructor equal-status learning community) [30]. This shift promotes the instructor's acceptance and learning of alternative ICT tools and increases assessment transparency as detailed assessment calculation methods are shared with the students. Student writing via ICT tools for assessment allows the students to learn at a self-directed pace according to their personal needs and habits [31]. Instructors can continually and clearly monitor and support student processes via writing as formative assessment. Student writing outcomes as summative assessment can be naturally formed without the need for students to invest additional effort. ICT tool use initiated by instructors or students and instructor responses to student needs creates a constructivist learning community for both the instructors and students.

A challenge facing higher education instructors is that, except for advanced ICT tools requiring considerable expertise, students tend to be more adept

than the instructors at learning new ICT tools, which inevitably challenges the instructors' abilities. In higher education, the battle of learning new ICT tools appears to favour digital natives (students) over digital immigrants (instructors), except for the advantage of wisdom and experience afforded instructors by their expertise [32]. Intergenerational learning must be advocated and incorporated into higher education teaching to create innovation, lifelong learning, and well-being [33]. Consequently, both students and instructors can be authorities and agents in the classroom, which forms a learning community in which the students and instructors have equal status.

Most Challenges for Improving Teaching Come from Exchange Students

The special needs of short-term exchange students provide the most active challenges. The reasons may be that exchange students are new arrivals to a local culture, resulting in their having the least contextual support and the most stress among the students in an international classroom [34]. Full-time international students have the least special needs because of their familiarity with being a minority in the international classroom and their ability to learn quickly. Local Taiwanese students receive strong support from the local culture but hesitate in expressing oral and written ideas in English [35]. Because of the quantity, quality, and strength of the challenges generated in an international classroom, exchange students induce the most improvement in a teaching model that aims to engage internationally diverse students through action research.

Study Limitations and Suggestions for Future Research

This 2-year action study had a small sample size and exchange students who mostly possessed European backgrounds, which may account in part for most of the challenges from the exchange students. Future research can investigate exchange students with different backgrounds. A teaching model that highly emphasises student engagement may reduce student learning opportunity. Although certain teaching and learning activities may transmit valuable cultural heritage or vocational knowledge and may present a great learning opportunity [36], they may also be rejected by students. For example, our course could encourage but not require the students' motivation for 'teaching experiments'. Although recording videos of student teaching can create additional learning opportunities (e.g., reflecting, improving, sharing, and contributing), certain students may refuse. Instructors may discover alternative ways of encouraging or requiring student engagement in future classrooms.

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NOTES ON CONTRIBUTOR

Mei-Shiu Chiu received a B. A. and an M. A. Degree in Education from National Taiwan Normal University and completed her doctoral study at the Faculty of Education, Cambridge University, UK. She has been a teacher in secondary education. Her research interests focus on interactions between emotion/affect, cognition, and culture for diverse knowledge domains (e.g., mathematics, science and energy) in relation to teaching, assessment, and large-scale surveys.

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