

**2021 Faculty of Education Postgraduate Research Symposium
“Rethinking the Future of Education”**

**Program Booklet
29 May 2021**

Faculty of Education

University of Macau



澳門大學
UNIVERSIDADE DE MACAU
UNIVERSITY OF MACAU



教育學院
Faculdade de Educação
Faculty of Education

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Symposium Introduction

This symposium provides opportunities for Faculty of Education (FED) postgraduate students at the master's and doctorate levels to: use English to practice giving conference papers and poster presentations in a friendly environment; present research to peers and experienced supervisors in a collegial and helpful environment; meet other postgraduate researchers in the faculty working on similar areas of research; receive constructive feedback from the audience; and get a sense of the wide range of postgraduate research being undertaken in FED.

The 2021 symposium theme is "Rethinking the Future of Education." The inauspicious COVID-19 pandemic has shaken up education, causing a rippling effect across all education sectors. Along with the hiccups caused by social distancing have come sparks of innovation leading to new ways of thinking about and conducting educational research. With these thoughts in mind, the FED at the University of Macau invited proposals by FED postgraduate students in all fields of education exploring educational practices in varied educational contexts. This resulted in the acceptance of eight paper and eight poster presentations on different aspects of education. In addition, we have the honor of having *Zhisheng (Edward) Wen* deliver a keynote speech on "Reconceptualizing Working Memory in Academic Learning and Education Research."

Organizing this symposium has been a labor of love. However, making the symposium a reality would not have been possible without the kind support of FED Dean Chuang Wang, my fellow symposium organizers, the abstract, poster, and paper reviewers, the FED administrative staff (especially Ms. Bonnie Wong and Mr. Brendan Lei), and the student helpers. I hope everyone finds the presentations intellectually stimulating and filled with opportunities for learning.

Barry Lee Reynolds
Symposium Chairperson
18 May 2021

Symposium Organizers

| | | |
|--------------------|--|---|
| Chuang Wang | Distinguished Professor Faculty of Education University of Macau | Professional Consultant |
| Barry Lee Reynolds | Assistant Professor Faculty of Education University of Macau | Symposium Chairperson, Website Content Creator, Symposium Program Book Coordinator, Budgeting, and Proposal/Presentation Evaluation Coordinator |
| Shulin (Colin) Yu | Associate Professor Faculty of Education University of Macau | Food, Beverage, and Transportation |
| Emily Pey-Tee Oon | Associate Professor Faculty of Education University of Macau | Paper Session Coordinator and General Logistics |
| Yang (Frank) Gong | Assistant Professor Faculty of Education University of Macau | Poster Session Coordinator |

Reviewers

Paper and Poster Presentation Abstract Reviewers

| | |
|----------------------------|-----------------------|
| Kan Kan Chan | Jin-Jy Shieh |
| Wei Wen Chen | Xuhua Sun |
| Boby Ho-Hong Ching | Audrey Min-Chuan Sung |
| Andy Chun Wai Fan | Tat Ming Sze |
| Walter King Yan Ho | Peggy Keang-ieng Vong |
| Elizabeth Tien Ping Hsiang | Sou Kuan Vong |
| Chester Chun Seng Kam | Matilda Ming Wai Wong |
| Ronnel B. King | Yan Wang |
| Zhaowei Kong | Rui (Eric) Yuan |
| Alice Si Man Lei | Mingming Zhou |
| Shing On Leung | |
| Miranda Chi Kuan Mak | |

Poster Presentation Reviewers

Andy Chun Wai Fan
Yang (Frank) Gong
Chester Chun Seng Kam
Emily Pey-Tee Oon
Barry Lee Reynolds
Jin-Jy Shieh
Shulin Yu
Rui (Eric) Yuan
Chuang Wang
Zhisheng (Edward) Wen
Mingming Zhou

Paper and Paper Presentation Reviewers

Yang (Frank) Gong
Emily Pey-Tee Oon
Barry Lee Reynolds
Shulin Yu

Schedule of Events

| Saturday 29 May 2021 | | | | |
|----------------------|---|---------------------------------------|---|---|
| Time | Event | Presenter | Location | Topic |
| 9:00-9:30 | Registration | | Foyer of Main Entrance in E4 Anthony Lao Building | |
| 9:30-9:40 | Preamble | Barry Lee Reynolds | E4-G062 (Lecture Hall) | |
| 9:40-10:00 | Opening remarks | Faculty of Education Dean Chuang Wang | E4-G062 (Lecture Hall) | |
| 10:00-11:00 | Keynote Speech | Zhisheng (Edward) Wen | E4-G062 (Lecture Hall) | Reconceptualizing Working Memory in Academic Learning and Education Research |
| 11:00-11:30 | Presentation #1 | Tianjiao (Tina) Song | E4-G062 (Lecture Hall) | The Effects of Lexical Coverage and Topic Familiarity on the Comprehension of L2 Expository Texts |
| 11:30-12:00 | Presentation #2 | Hong Li | E4-G062 (Lecture Hall) | The Impact of Reading Strategy Instruction on Reading Comprehension, Strategy Use, Motivation, and Self-efficacy in Chinese University EFL Students |
| 12:00-12:30 | Presentation #3 | Jiajing Li | E4-G062 (Lecture Hall) | Measuring English Language Learners' Self-efficacy in Vocabulary Learning: Instrument Development and Validation |
| 12:30-13:30 | Lunch | | E33-GF Learning Commons | |
| 13:30-14:00 | Presentation #4 | Ziying Wang | E4-G062 (Lecture Hall) | Filial Piety, Destiny Love Belief, and Adolescent Romantic Relationships: A Gender Perspective |
| 14:00-14:30 | Presentation #5 | Hongzhen Cheng | E4-G062 (Lecture Hall) | Revisiting Grit: How much does it overlap with resilience? |
| 14:30-15:00 | Presentation #6 | Tianxue Cui | E4-G062 (Lecture Hall) | How to promote academic resilience among socio-economically disadvantaged Chinese students? |
| 15:00-16:00 | Tea Break / Poster Session | | Foyer of Main Entrance in E4 Anthony Lao Building | |
| 16:00-16:30 | Presentation #7 | Feng Geng | E4-G062 (Lecture Hall) | Doctoral Students' Academic Emotions Towards Feedback on Academic Writing |
| 16:30-17:00 | Presentation #8 | Wendong Li | E4-G062 (Lecture Hall) | Understanding the Second Language Socialization Experiences of International Students in China |
| 17:00-17:15 | Awards | Faculty of Education Dean Chuang Wang | E4-G062 (Lecture Hall) | |
| 17:15-17:30 | Closing Remarks | Barry Lee Reynolds | E4-G062 (Lecture Hall) | |
| 18:30 | Welcome Dinner for Keynote Speaker and Symposium Organizers | | Brasserie – Parisian Macau | |

Keynote Speech

Keynote Speaker

Zhisheng (Edward) Wen obtained his Ph.D. in applied linguistics from the Chinese University of Hong Kong (Supervisor: Prof. Peter Skehan) and is currently an Associate Professor in the School of Languages and Translation at Macao Polytechnic Institute in Macau SAR, China. Dr. Wen has over 20 years of teaching and teacher education experience at universities. His research interests lie in second language acquisition, task-based language teaching and learning, psycholinguistics and cognitive science, with a particular focus on the roles of working memory and language aptitude in SLA. Dr. Wen has published extensively in these areas in academic journals and edited volumes. His recent books include *Working memory in second language acquisition and processing* (Multilingual Matters, 2015), *Working memory and second language learning* (Multilingual Matters, 2016), *Language aptitude* (Routledge, 2019), and *Researching L2 task performance and pedagogy* (John Benjamins, 2019). Forthcoming books include “*Cognitive individual differences in second language acquisition*” (de Gruyter Mouton, 2021) and “*Cambridge handbook of working memory and language*” (Cambridge University Press, 2021).

Reconceptualizing Working Memory in Academic Learning and Educational Research

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Working memory (WM) refers to our cognitive capacity to temporarily and simultaneously store and process a limited amount of information in our mind to complete some ongoing mental tasks. Inspired by previous research in cognitive science, the past decades have also witnessed an increasing body of empirical studies exploring the role WM plays in academic learning, going as far as to the claim that WM is a better predictor than intelligence. Empirical evidence accumulating from both individual studies and systematic meta-analyses is pointing to significant albeit moderate effects of WM on key aspects of academic learning, including language learning, mathematics, logical thinking, and problem-solving. The current talk sets out to synthesize these emerging results and findings lending support to an integrated account of WM in academic learning. Thus, I call for collaborative work among multiple disciplines to reconceptualize WM as a multi-dimensional, complex, dynamic, and adaptive cognitive resource system that modulates and shapes aspects of high-level human cognition. Towards the end, I tease out the theoretical and methodological ramifications of the integrated framework for theory construction, assessment procedures, syllabus design, classroom instruction, and intervention solutions.

Paper Presentations

The Effects of Lexical Coverage and Topic Familiarity on the Comprehension of L2

Expository Texts

Tianjiao (Tina) Song

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A few early studies found lexical coverage (i.e., the percentage of running words known in a text), contributed to second language (i.e., L2) reading comprehension (Hu & Nation, 2000; Laufer & Ravenhorst-Kalovski, 2010; Schmitt, Jiang, & Grabe, 2011). However, their results were either drawn from the examination of one short narrative text or academic texts of different lengths with no statistical control of topic familiarity, which has been found particularly significant in reading expository texts (Brantmeier, 2005; Lee, 2007). Thus, it is still unclear about the effect of topic familiarity, nor the interaction effect between topic familiarity and lexical coverage on L2 readers' expository reading comprehension. Considering the limitations of the previous research, the present study examined the effect of topic familiarity and lexical coverage (i.e., 95%, 96%, 97%, 98%, 99%, and 100%) on the L2 reading comprehension of expository texts. Two reader-related variables: L2 reading ability and L2 vocabulary size, were controlled to yield more robust research findings. Eighty-one Chinese first-year undergraduate English majors from six intact classes were involved in the study and completed the Vocabulary Size Test (VST, Nation & Beglar, 2007), an L2 reading ability test (the Cambridge Preliminary English Test for Schools), a topic familiarity multiple-choice test, and a 7-point Likert topic familiarity ratings. Results from two-way repeated measure ANOVA showed a non-significant interaction between topic familiarity and lexical coverage on L2 learners' comprehension scores. The main effect of topic familiarity was significant whereas the main effect of lexical coverage was non-significant. These results advanced the current understanding of the lexical coverage-reading comprehension relationship by suggesting the significant and independent contribution of topic familiarity to L2 expository reading comprehension. Pedagogical implications were discussed in relation to the findings.

The Impact of Reading Strategy Instruction on Reading Comprehension, Strategy Use, Motivation, and Self-efficacy in Chinese University EFL Students

Hong Li

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This study, quasi-experimental in design, investigated the effect of explicit reading strategy instruction on reading comprehension, reading strategy use, reading motivation, and reading self-efficacy in Chinese university EFL learners. A total of 117 first-year university students were randomly assigned to either the experimental group or the control group. Students in the experimental group received a 16-week reading strategy training embedded into their English reading classes. The data were collected through five major instruments: a reading comprehension test, a reading strategy questionnaire, a reading motivation questionnaire, a reading self-efficacy questionnaire, and a semi-structured interview. Independent-samples t-test results showed that there was a significant difference in reading comprehension between the experimental group and the control group after the reading strategy instruction, suggesting that students who received reading strategy instruction made significant improvement in their reading comprehension. ANCOVA analysis of pre- and post- questionnaires results showed that there were no significant changes in reading strategy use, reading motivation, and reading self-efficacy at the end of the strategy instruction. Furthermore, interview data, showed that experimental group students held very positive attitudes towards the reading strategy training. Interview results further suggested that lack of significant changes in strategy use, motivation, and self-efficacy at the end of strategy training could be explained by a dynamic interplay of individual and contextual factors.

**Measuring English Language Learners' Self-efficacy in Vocabulary Learning:
Instrument Development and Validation**

Jiajing Li

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Only a few studies have been undertaken to examine students' self-efficacy in vocabulary learning. This article reports the process of development and validation of the Questionnaire of English Vocabulary Learning Self-Efficacy (SEVL) which was developed based upon the three aspects of word knowledge, namely, form, meaning, and use. This instrument was administered to 400 Chinese high school students, whose vocabulary competence was measured with the form and meaning part of the Test of English as a Foreign Language (TOEFL) Junior Standard Test. Results of confirmatory factor analysis provided evidence for the structural aspect of construct validity. The external aspect of construct validity was supported by moderate Pearson correlation coefficients between vocabulary learning self-efficacy and student performance on the TOEFL test. Taken together, this empirically validated questionnaire can serve as a diagnostic measure to help teachers understand and identify students' vocabulary learning self-efficacy in terms of three aspects of word knowledge.

**Filial Piety, Destiny Love Belief, and Adolescent Romantic Relationships: A Gender
Perspective**

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The current study focused on the association between filial piety (a cultural-specific indicator of parent-child interactions as well as those interactions' quality) and romantic relationships among Chinese adolescents. This focus was looked at via a joint investigation exploring (a) how implicit destiny belief about romantic relationships would mediate the links between filial piety beliefs (i.e., authoritarian filial piety and reciprocal filial piety) and intimacy in romantic relationships, and (b) whether the mediation effects would be moderated by gender. Results of the study involving 277 adolescents who were currently romantically involved indicated that destiny belief significantly mediated both the negative relation between authoritarian filial piety and romantic intimacy and the positive relation between reciprocal filial piety and romantic intimacy. Further, gender significantly moderated the relation between destiny belief and romantic intimacy, with a positively significant relation for males but an insignificant relation for females. The current findings supported the importance of destiny belief in accounting for the role that filial piety played in developing romantic intimacy and highlighted the gender differences in romantic relationships among Chinese adolescents. Specifically, Chinese adolescents who endorse more responsibility-oriented (i.e., authoritarian filial piety) and less affection-oriented (i.e., reciprocal filial piety) beliefs about parent-child bonding tend to develop a stronger destiny love belief, which may subsequently contribute to lower intimacy in their romantic relationship. Particularly, Chinese males may be less likely than females to develop romantic intimacy once they hold the belief in relationship destiny.

Revisiting Grit: How much does it overlap with resilience?

Hongzhen Cheng

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Jangle fallacy means the false assumptions that two identical constructs are different because they are named differently (Kelly, 1927), which might waste academic resources on studying the reinvented wheel and hinder the integration of research efforts. This paper proposed that one component of grit (perseverance of effort) and resilience could be regarded as the same construct based on similarities in their theoretical and operational definitions. As a preliminary investigation, perseverance of effort and resilience were found to correlate nearly perfectly with each other and have similar correlations with those external variables under investigation. Future research may consider integrating the theories and the research effort related to grit and resilience together.

How to promote academic resilience among socio-economically disadvantaged Chinese students?

Tianxue Cui

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Under the guidance of the social-ecological perspective, this study aimed to find out the possible factors that contribute to SED students becoming academic resilience from the individual, school, and family domains. Participants were 3985 eighth-graders from a northern city in China who took part in the National Standardized Test in five curriculum areas conducted by Regional Education Monitoring Project (REMP) at Beijing Normal University. The average score of five subjects was used to represent their academic performance. Students' questionnaires of motivation, teacher-student relationships, peer relationships, parent-child relationships, and parental involvement were well-established and widely used by scholars. Students' gender, basic cognitive ability (IQ), and resident status were considered as the controlled variables. Intra-class Correlation Coefficients (ICC) of 68.3% between-school variance for the percentage of academic resilience firstly justified conducting multi-level models. Two-level logistic regression models showed that when adding all variables into the model, students' educational expectation ($B = 2.38$, $\text{Exp}(B) = 10.85$, individual-domain), intrinsic motivation ($B = .45$, $\text{Exp}(B) = 1.57$, individual-domain), school SES ($B = 2.20$, $\text{Exp}(B) = 9.05$, school-domain), parent-child relationships ($B = 1.52$, $\text{Exp}(B) = 4.55$, family-domain) played significantly positive predictions on the likelihood of becoming academic resilience, whereas students' perceived more parental involvement in daily life ($B = -.65$, $\text{Exp}(B) = .66$, family-domain) would decrease the odds of being academic resilience. Teacher-student relationships, peer relationships, parental involvement in study, and individuals' extrinsic motivation showed non-significant predictions on being academic resilience. The findings suggest that multiple aspects need to be highlighted for SED students to improve the possibility of resilience in learning, such as providing more school resources, positive parent-child interactions, and helping to motivate students to achieve high educational expectations and intrinsic motivation, et al.

Doctoral Students' Academic Emotions Towards Feedback on Academic Writing

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While there is no lack of research on L2 students' affective reactions to feedback in higher education, scholars have conducted much less research on doctoral students' academic emotions in academic writing. Doctoral students can be viewed as emotional workers often needing to be sensitive to the demands that their research makes on their emotions, and skillful in regulating their feelings. Informed by the analytical framework of academic emotions, this study examines 2 Chinese international doctoral students' emotional reactions to feedback and emotion regulation strategies in academic writing. Qualitative data is collected from participants' self-reported critical incidents and retrospective interviews. The findings reveal that the focal doctoral students experience rich and dynamic academic emotions across the process of revisions. While both participants report having experienced negative emotions elicited by feedback, their discrete emotions vary due to different levels of activation, and these emotions fluctuate in the revision process because of their use of emotion regulation strategies. The findings also reveal that both personal and contextual antecedents contribute to doctoral students' academic emotions and emotion regulation strategies, calling for more emotional scaffolding to novice researchers in academic writing for publication purposes.

Agency in the Nexus of Identity and Social Network: Understanding the Second Language Socialization Experiences of International Students in China

Wendong Li

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As the third study abroad destination country in the world, China has seen an exponential growth of degree-seeking international students learning Chinese as an additional language, which draws scholarly attention to their identity transformation in academic encounters (Gong et al., 2020). While there is a wealth of findings on international students' identity challenges in China (Li & Li, 2020), knowledge remains limited regarding how students' identity interacts with their social network development and affects their language socialization while abroad. In view of this gap, the present study draws on the notion of agency in second language socialization (SLS) theory (Scheffelin & Och, 1986; Duff, 2012) to examine the interplay between identity and social network in the language socialization experiences of international students in China. As part of a multiple case study involving eight international students in a multilingual university in China, this paper presented an in-depth analysis of the second language Chinese socialization experience of a Thai student, Nina. To this end, multiple instruments were used for data collection over one year, including semi-structured interviews, Study Abroad Network Questionnaire (SANQ), and ethnographic observations. Data analysis revealed the mediation of agency in the intersection between identity and social network: (1) The availability or lack of agency could contribute to the divergent ways through which linguistic and cultural resources were mobilized for enacting identities and building social ties. (2) Agency was neither readily nor equally accessible to learners, but rather it was negotiated between individual identity and social network in a way and in turn led to individualized socialization experiences. Finally, implications were given to facilitate international students' language and academic socialization abroad.

Poster Presentations

Exploring the Role of Augmented Reality (AR) Teaching in the Physical Education Class at the University

Zhuowei Ma

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It is without a doubt that technology is increasingly included in our daily life. Starting from daily affairs to home electrical appliances management, it appears that Artificial Intelligence (AI), Augmented Reality (AR), and Virtual Reality (VR), etc. become part of our life. How to engage these developments into PE learning turns to be the concern. The purpose will be the efficiency in enhancing our activities level in physical activities. The main goal of this research is to identify the development of AR technological-based learning approach in physical education and suggest a possible method to combine the technological approach in games teaching. The research should complete in a university within two classes. One of the classes will present with AR technology elements in games learning and physical education. The other group process without the technological support and students are in physical education class with games learning as the main activity. Both students are engaged in class with 14 weeks' length. Rubrics are used to assess students' performances, before and after the modular learning, students are given a questionnaire to learn about their motivation and satisfaction in learning. Means and frequency will be used to observe the trend of development and the t-test will be used to learn the differences between the two groups of learning in students. Interview of both teacher and student's will be conducted. It assumes that the learning motive and class satisfaction in the experimental group will be greater than the students in control group. Students' performance will be enhanced in the technological group when compared with the control group. There are no differences between male and female students. Teachers are advised to in-cooperate with technological method in learning of physical activities and the result is remarkable in helping students to achieve the expected learning quality.

Rethinking the Future of Education: School-based Physical Education Curriculum and Extracurricular Approach in Developing Self-efficacy Perception and Sport Motivation among Young Golfers

Yangyang Xie

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Physical education takes a role in the curriculum of all schools. However, the physical education curriculum in schools has constraints. Inspiration for a lifelong active lifestyle cannot be dependent only on physical education at schools. The desire for school-based curricular physical education subsequently starts to voice the importance, and the extracurricular approach emerges as supplementation. Accordingly, constructing a more comprehensive and appropriate school-based curricular physical education network is vital to promote physical education in schools. This research plans to evaluate participants' self-efficacy perception and sport motivation development in school-based physical education curriculum and extracurricular physical education learning. The study will select around 100 primary school-aged golfers 10 to 12 years old from fifth and sixth grades. The quota of targeted participants will evenly assign to two groups. One group follows the school-based curricular golf pedagogy, and the other employs an extracurricular approach that adopts typical golf learning alongside the indoor simulator system with the internet interaction. The self-reported questionnaire consists of demographic information and two other measuring contents, including the perception of self-efficacy and motivation toward sports, which will be utilized to conduct the data collection. Subsequently, this research plans to exam all data via quantitative analysis. The comparison between two different golf learning approaches will demonstrate the difference of participants' self-efficacy perception and sport motivation between school-based curriculum and extracurricular programme. On the other hand, the Pearson correlation study can also reveal if significant correlations exist among gender, age and different pedagogy. Moreover, relationships among all variables can be measured through regression study.

Effects of the Command and the Guided Discovery Teaching Styles on Acquisition and Retention of the Basic Tennis Skills

Linjian Wen

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Mosston's system of instructional models has had a significant impact on physical education teaching practices (Mosston & Ashworth, 1986). The Spectrum is a set of 11 iconic teaching forms that serve as indicators for a wide range of teaching and learning experiences (command (A), practice (B), reciprocal (C), self-check (D), inclusion (E), guided discovery (F), convergent discovery (G), divergent production (H), learner-designed individual program (I), learner-initiated (J), and self-teaching (K). If not, an infinite number of pedagogical differences exist between the benchmark teaching styles, all of which share similar, though not identical, decision frameworks to the landmark teaching style(s) they are situated close or in. Canopy designs are the name given to these varieties. In the present study, we will focus on the A-Command style and F-Guided discovery style. These two styles that will be selected for this investigation have different characteristics and objectives. The command style is a direct teaching style that focuses on knowledge replication, while the directed exploration style is an indirect teaching style that focuses on knowledge creation. The first purpose of the present study is to analyze the effect on obtaining basic tennis skills after instructions with different teaching styles of the Mosston teaching spectrum (specifically here, the A-Guided discovery style and F-Guided discovery style). Not only is skill acquisition important, but the retention rate is also one of the crucial criteria of evaluating teaching strategies. Therefore, our second purpose is to test the retention rate of tennis skills after different instructions.

In Effect of Audiovisual Materials to Influence Student's Physical Activity and Skills Ability in Macau

Andy Lam

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Under the COVID-19, the speed of transforming in education is growing faster. We ride the wave of the digital era; it's becoming easier to get connected with global reach. E-learning and digital learning takes a big step in school after this pandemic. Audiovisual materials are including photos, videos, DVDs etc. In this article, we are going to use video resource applied in primary school physical education class. Not only with the traditional skill-based teaching, but also adding the audiovisual material in class to increase student's physical activity participation and specific skill ability. Even if some students are blocked by quarantine, they still have ways to learn and follow the steps from the audiovisual materials. The study aims to examine any significant difference between video method with student's physical activity level and skills ability. Cluster sampling is used as a sampling method. Two classes of 3rd grade students in Macau primary school invited to participate in the experiment. Each class contains about 30 students and there are 60 students in total. The experiment group will provide extra video material to students. The control group is taught by normal physical education tutorials. Questionnaires and skill measurement table is measurement tool to investigate student's physical activity level and skill ability. In order to prevent teacher differences in teaching, the same teacher is arranged in both experiment group and control group. We discover the audiovisual material is an effective component to influence the physical activity and skills ability. After this study, we could utilize the audiovisual materials into entire primary school to enhance student's physical activity level and make teacher easier to deliver the skill ability in future.

Effects of Two Different Types of Exercise for Cardiorespiratory Fitness Improvements

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Improving Cardiorespiratory fitness (CRF) during the COVID-19 pandemic is an important means to effectively improve people's quality of life. High intensity interval training (HIIT) is an effective way to improve CRF, but the effect of comparing with moderate-intensity continuous training (MICT) on CRF is uncertain. Objective: This study, according to Meta-analysis methods, compares the effects of HIIT and MICT for CRF in healthy young and middle-aged adults. Methods: Two electronic databases (PubMed, Web of Science) were searched for randomized controlled trial (RCT) comparing the effect of HIIT and MICT on CRF in healthy young and middle-aged adults. Used the key words such as "high-intensity interval training", "high-intensity intermittent training", "high-intensity interval exercise", "sprint interval training", HIIT, HIIE, HIT, SIT and "moderate intensity continuous training", "continuous training", "endurance training", MICT, MICE, MCT. The risk of bias assessment was performed for each of the included studies. The meta-analysis was performed by using STATA. Results: 13 studies, including 171 participants in HIIT and 169 participants in MICT, met the eligibility criteria and were included in the meta-analysis. The pooled results showed that HIIT produced greater increases in VO₂max (WMD=1.83, 95%CI: 0.80~2.85, P<0.001) than MICT. Significant differences between HIIT and MICT were observed for CRF in subgroups "< 25 years" (WMD=1.61, 95%CI: -0.36~3.57, P=0.006), ">6 weeks" (WMD=2.22, 95%CI: 0.94~3.31, P=0.000) and "W/R≥1.0" (WMD=2.37, 95%CI: 1.05~3.67, P=0.000). Conclusion: HIIT could be considered a more effective intervention for improving cardiorespiratory fitness in healthy young and middle-aged adults, in comparison with MICT. Ages of the participants, duration of training and work/rest ratio were moderators.

A Humanizing School: Tensions and Testimonies of an Innovative High School in China

Shuwen Liu

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Humanization in education have long been critiqued as elusive in actual practice. Over the years, humanizing pedagogy at the classroom level have been properly investigated in postcolonial and racial contexts, yet limited scholarly attention has been given to humanizing schools, especially in Asian contexts. The school under study is purposively sampled as it is a well-esteemed innovative school in China. Through a phenomenological case study, the author tries to unearth the experiences of the different stakeholders (e.g., students, parents, teachers, administrators) through school visits, classroom observations and semi-structured interviews. The findings reveal a model of a “humanizing” school where (1) students, teachers, parents and administrators all respect each other as individuals, in and out of classrooms, culminating in the valuing of all stakeholders’ right to speak (2) all stakeholders are treated as mobilizable resources towards the common goal of students’ development, namely, all members are working in synergy as a community (3) an institutional adaptiveness where the mindset of constantly “iterate and innovate” (“迭代”) for a better outcome is faithfully implemented. The paper also identifies emerging tensions of a humanizing school, namely, (1) developing students as whole persons conflicted with the demand for achievement outcomes (e.g. college entrance and grades) (2) the growing scale of the school in population and members’ yearning for intimacy and a continued “acquittance society” (“熟人社会”) (3) institutional spontaneity and flexibility conflicted with an increasing need for organizational ground rules. The findings are significant in theorizing innovative and humanizing education, especially at the school level. Most importantly, it has practical implications to educational practitioners striving for an innovative and humanizing orientation in their schools and classrooms.

Transdisciplinary Professionals as Collaborative Mentors in Family-centered Caregiver Support for Early Childhood Family Education

Wensi Yang

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Early childhood education (ECE) in the People's Republic of China (PRC) has become increasingly complex and multi-dimensional. Chinese parents, as their children's primary caregivers, are becoming more actively involved in ECE. This qualitative study provides an insight into how three ECE-related professionals, a family education professional, an ECE enrichment educator, and a founder/administrator of an ECE enrichment center, worked collaboratively in a transdisciplinary ECE program. Specifically, the study examined this program's approach based on the best practice model for teamwork between the ECE-related professionals and the primary caregivers of young children. In this case study, the best practice model referred to a practical and coherent approach of achieving family-centered ECE. The five-phased procedures outlined by Yin (2011) were employed to analyze the textual data. Findings not only support existing knowledge regarding the factors that influence effective transdisciplinary collaboration among team members in early childhood family education (ECFE) but also illuminate several new issues relating to ECFE.

Development of a Formative Assessment to Measure Arithmetic Ability of Primary School Students

Wai Kei Chan

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Bloom's cognitive taxonomy is a tool for categorizing students' knowledge to achieve learning objectives (Bloom, 1956). It can be used as a measurement instrument to help teachers understand students' cognitive abilities concerning expected learning results (Krathwohl, 2002) through formative tests in the classroom. Formative assessments offer guidance that can improve students' academic progressions and help teachers tailor their instruction to best suit learners' needs. Teachers are often unaware of how formative assessment should be structured and applied to gain accurate insight into students' understanding. We designed and piloted a test instrument consisting of 21 multiple-choice questions (MCQs) that assess arithmetic intended learning outcomes (ILOs) of Primary 3 students in Macau, using Wilson's (2004) four building blocks of (a) construct map, (b) item design, (c) outcome space, and (d) measurement model. After the research, we discovered that the difficulty of the items follows the expected order in the person construct map; the difficulty of each designed item aligns with the cognitive level of the student; students' distribution follows the structure of the person construct map; and that the word problem is more complicated than the calculation problem. Lastly, in this research, we explore how to design meaningful formative assessments and discuss the importance of tracking student learning progressions to improve the learning of mathematics in elementary classrooms.