A Report on the Cross-institutional Study of Vocational Education and Training (VET) Students’ Learning Needs as well as Teachers and Workplace Mentors’ Teaching Practices

For the Quality Enhancement Support Scheme (QESS) Project:

Development of Effective Pedagogical Practices and a Cross-institutional Online Sharing Platform for Hong Kong’s VET

By

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Dr Ng Yuk Kwan, Ricky
Principal Investigator of the Study
Executive Summary
With an aim to reconfirm and identify suitable pedagogical practices to devise suitable e-learning means for more effective learning and teaching in Vocational Education and Training (VET), this study used questionnaire surveys, focus group interviews and class visits with a range of VET stakeholders for the identification of specific instructional strategies to derive innovative pedagogical practices. Curricular and instructional materials from the participating institutions were also collected for comparison and analysis to generate innovative instructional strategies for the enhancement of teaching and learning packages (TLPs), specifications and design of the online sharing platform. Findings revealed that flexibility, guidance, collaboration and training would be able to accommodate VET students, teachers and workplace mentors’ learning and teaching needs. It is suggested that technology enhanced learning (TEL) would be the most appropriate innovative pedagogical practices for VET. Furthermore, using various kinds of media and representations, such as text, graphs, tables, audio, videos, animations, and interactive dynamic visuals would accommodate learning and teaching needs for students with different learning styles. It is also important to make use of new technologies to blend face-to-face teaching with e-learning or mobile learning to further enhance students’ motivation and interaction. Last but not least, coaching, feedback, cases and real-life examples, experience sharing, self-evaluation, target setting, multimedia materials, blended-learning etc. are identified as specific instructional strategies for effective learning and teaching in VET. Making references to the findings of this study, the following are recommended:

Recommendations

1. **Enhance Learning Flexibility, Guidance, Collaboration and Training to Accommodate Students, Teachers and Workplace Mentors’ Learning and Teaching Needs**
   - Provide students with greater flexibility, accessibility and convenience when studying.
   - Enhance peer collaborative learning activities for information sharing, discussion and mutual support.
   - Provide more hands-on practices and guidance for teachers and workplace mentors to facilitate students’ learning in schools and workplaces.
   - Provide teachers and workplace mentors with training on technology enhanced learning (TEL), pedagogical practices, presentation skills, instructional design and classroom management skills.
   - Support workplace mentors with train-the-trainer, coaching skills and mentoring skills courses.

2. **Employ Technology Enhanced Learning (TEL) as Innovative Pedagogical Practices for VET**
   - Promote TEL to allow a wider acceptance between VET stakeholders.
   - Increase technology enhanced learning and teaching activities to benefit both teachers and
students.

- Develop e-learning materials and online resources (e.g. interactive course contents, glossaries, worksheets, online supplementary materials and subject related information) for ease of online study.
- Promote flexible and self-regulated learning using Massive Open Online Course (MOOC), demonstration videos, online assessment and lecture videos.
- Increase supports on augmented reality (AR) and virtual reality (VR) to motivate students to learn and facilitate learning and teaching.
- Use social media and video conferencing for peer collaborative learning and better interactions and communication outside school and during Industrial Attachments (IAs).
- Develop mobile apps to facilitate online learning and teaching.
- Enhance the schools’ e-learning platform for more user friendly experiences.
- Explore multiple learning channels for students to self-regulate their learning and to establish a sharing platform for discussion and experience, as well as a platform for materials sharing between different vocational institutions.
- Establish sharing platforms between school instructors, workplace mentors and students.
- Develop guidebooks for teachers and students on how to work with workplace mentors.
- Enhance TLPs with visuals and real-life examples (e.g. videos, animations, graphs, images, pictures, table charts, and current issues) rather than words/text.

3. **Devise Specific Instructional Strategies for VET**

- Adopt guidance, coaching, observations, case studies, real-life examples, experience sharing, learning and teaching activities, self-evaluation, target setting and feedback to help students learn more effectively.
- Use videos, case reviews, self-assessments and reflections, hands-on practices, demonstrations of procedures and real-life projects to facilitate students’ learning in the workplaces.
- Employ multimedia materials, such as text, images, sounds and videos to create learning materials that suit learners with different learning styles and promote a higher degree of interactivity in the learning process.
- Transform the text-based learning packages into multiple representations which can suit the level, subject content, and the needs of learners.
- Blend face-to-face teaching with e-learning or mobile learning to further enhance student motivation and interaction.
Aims of this Study
This cross-institutional study aims to reconfirm and identify suitable vocational education and training (VET) pedagogical practices to devise suitable e-learning means (e.g. differentiated instruction, work-integrated learning and assessment, technology enhanced learning (TEL)) for more effective learning and teaching. This study is a collaboration between the Vocational Training Council (VTC), The Open University of Hong Kong (OUHK), Caritas Institute of Higher Education (CIHE), and Caritas Bianchi College of Careers (CBCC). While traditional education focuses on contemplation of academic concepts, VET emphasises mastery of hands-on skills and pursuits of students’ generic and higher level knowledge together with work professionalism (e.g. work ethics and work attitudes). Naturally, for effective delivery of VET, the pedagogy should go beyond the use of lectures, literature review and tutorials which are heavily emphasised in traditional schooling. However, fundamental questions remain on how school-based learning and workplace learning can be designed, delivered and assessed coherently so that they reinforce or complement each other. For that to be possible, effective means of e-learning that take advantages of the modern technologies need to be introduced.

With the changes in learning habits and preferences of students, it is necessary to conduct a review study on learning and teaching practices for enhancing the teaching and learning packages (TLPs) so as to accommodate students’ learning needs. Indeed, VET aims to develop people skills – skills in building services maintenance, automobile repair, medicine dispensary, hospitality and servicing, and so on – that would help engage them in useful endeavours, and at the same time address the operational needs of the labour market/workforce. VET is also to recognise that people are of different talents – some more geared towards academic study, and others towards hands-on dexterities – and offer them education that suits their attributes. More importantly, an effective pedagogical approach that caters for the needs of students who are less inclined towards the traditional lecture hall-type of learning, and that fits the constraints and needs of Hong Kong is yet to be developed. Furthermore, there is a lack of a common learning framework across institutions and industries to make reference to. Appropriate pedagogical and assessment approaches, and trade-specific learning and teaching materials especially designed for VET would set standard and generate mutual benefits between teachers, workplace mentors and students for better learning and teaching as well as nurturing work ethics and work attitudes in the workplace. In view of the above, specifically, this study aims to:

1. identify the learning and teaching needs of Hong Kong VET students, teachers and workplace mentors;
2. identify specific instructional strategies for VET; and
3. derive innovative pedagogical practices to accommodate the educational needs for VET.
Background

To better cater for the increasing demand and diversification of trade-specific subjects in VET, governments and VET training providers in different countries have begun to make significant efforts to enhance VET’s positioning, curriculum design and delivery, learning and teaching strategies as well as industrial and community collaborations.

Findings from the report “Global Trends in Vocational Education and Training” (Thomson, 2011) revealed that one of the global trends is that students are coming into vocational education at an earlier age and later in life. The report found that in the United Kingdom, the total number of vocational qualifications awarded increased by 11% in 2009, driven largely by students undertaking vocational courses at schools ("Vocational Exams on the Increase,” 2009). The number of school students aged 15 to 19 participated in Australian vocational education and training also increased by nearly 30% from 167,100 in 2006 to 216,700 in 2009 (National Centre for Vocational Education Research, 2010). In Asia, Singapore, for instance, quadrupled its annual capacity in continuing education and training from 22,000 workers in 2007 to 80,000 workers in 2010 (Ministry of Manpower Singapore Government, 2010). Likewise, China has introduced a ‘dual certification’ system that provides students with a diploma and vocational permit upon graduation from secondary vocational education schools to enhance the work-readiness of its young people (Ministry of Education of the People’s Republic of China, 2010).

The Hong Kong Experience

VET has received more attention in Hong Kong in recent years. There are a few significant factors contributing to the betterment of VET. Firstly, although VET has been reckoned as an alternative study pathway beneficial for the less academically achieved students, parents and students now come to realise that VET would enable students to flourish. VET also provides more choices for students to pursue their interests. Secondly, there is a growing demand for skilled labour in some of the industries, especially for those manufacturing and production lines returned from China. Thirdly, there is an urge of the Hong Kong Special Administrative Region (HKSAR) Government to develop graduates with knowledge and skills matching labour qualities demanded by various industries. In recent years, there are signs that the HKSAR Government has started to step up her emphasis on VET. 2014 is a particularly important year for VET in Hong Kong. An evidence is that a substantial portion of the 2014 Policy Address by the Chief Executive of HKSAR was spent just on VET. The Chief Executive highlighted in the 2014 Policy Address that “mainstream education is not a straightjacket that fits all young people as everyone has his or her own interests and abilities. The Government should re-establish the positioning of vocational education in our education system and guide the younger generation in choosing their career” (HKSAR Government, 2014, p.102). In arriving this, a series of measures were considered by the Government to strengthen VET and support its development alongside academic education.
The New Earn and Learn Pilot Scheme
In particular, a pilot training and support scheme ‘The New Earn and Learn Pilot Scheme’ achieved by “integrating structured apprenticeship training programmes with clear career progression pathways” was proposed to attract and retain talent for industries with a keen demand for labour (HKSAR Government, 2014, p.106). ‘The New Earn and Learn Pilot Scheme’ integrates structured vocational education and on-the-job training with clear progression pathways to attract talent for industries and trades. The Government and participating industries would provide participants with an allowance and a guaranteed salary, such that young people can earn a steady income while equipping themselves with knowledge and skills to pursue a promising career. The modes of training would be specially designed to cater for the needs and operation of specific trades and industries. The participants would attend training programmes of VET and receive on-the-job training at employing companies. Graduates of the schemes can also further their studies by acquiring higher academic qualifications for career development. During their study in the Scheme, students receive theoretical knowledge and practice in simulated work environments in school, whilst the learning and practices of ‘authentic’ trade-specific and generic competences such as communication, team-work, problem solving, transferability and work ethics happen in their work engagements in real-life workplaces (Deissinger, 1997; Van Merriënboer, 2001; Tremblay & Le Bot, 2003). ‘The New Earn and Learn Pilot Scheme’ was subsequently endorsed by the Legislative Council. Furthermore, VET in Hong Kong has developed to have heavy emphasis of workshop learning and industrial attachment (IA). The recent pilot training and support scheme put forward by the Chief Executive (HKSAR Government, 2014) has fueled the direction on the development of VET further.

Study Subsidy Scheme for Designated Professional (SSSDP) Sectors
As one of the initiatives in the 2014 Policy Address and with an aim to nurture potential students to meet the manpower demand in Hong Kong, the SSSDP was implemented on a pilot basis to subsidise about 1,000 students in 2015/16 academic year to pursue designated full-time accredited self-financing undergraduate programmes in six selected disciplines (Architecture and Engineering, Creative Industry, Health Care, Logistic, Testing and Certification, Tourism and Hospitality).

The two Pilot Schemes indicated the HKSAR Government’s determination to support, enhance and promote VET in Hong Kong.

The Task Force on Promotion of Vocational Education
In addition, the Task Force on Promotion of Vocational Education was formed in 2014 by the HKSAR Government to conduct studies and advise the Secretary for Education on strategies and concrete proposals to raise the awareness and recognition of vocational education in Hong Kong. A series of public engagement activities were conducted for the measurement of the stakeholders’ perceptions towards VET and views on the promotion of VET in Hong Kong. The Task Force recommends a three-pronged strategy to promote VET, namely:
1. **Rebranding VET**

One of the noteworthy points in the Report is “to rebrand VET in Hong Kong as Vocational and Professional Education and Training (VPET) covering programmes up to degree level with a high percentage of curriculum consisting of specialised contents in vocational skills or professional knowledge” to better equip VPET learners with “practical skills, attitude and knowledge for the relevant professions and specific industries” (Education Bureau of HKSAR, 2015, p.86-87). This rebranding would further enhance the professional knowledge and professional recognition of VPET.

2. **Strengthening Promotion**

To promote VPET and to raise awareness and recognition of vocational education in Hong Kong, the Report suggests ‘strengthening promotion’ through a range of publicity campaigns on media and organisation of large-scale skills competitions together with action and applied research to exhibit VPET students’ achievement and professionalism for the promotion of the professional image of VPET, VPET’s related career and life planning education.

3. **Sustaining Efforts**

For sustainability, the Task Force “recommends the government to encourage the senior government officials to seize every opportunity to promote and support VPET on different occasions so as to demonstrate the government’s support and recognition of VPET as an integral part of the community” (Education Bureau of HKSAR, 2015, p.102). In addition, promoting Qualifications Framework (QF) with the articulation and progression pathways and seeking the major chambers of commerce’s support to encourage their members to make reference to QF in recruitment and promotion would further enhance the status and career progress of VPET. Last but not least, the Task Force also recommends the Government to conduct tracking surveys with relevant stakeholders on attitude change towards VPET.

The above summarised the salient points of the Report while implications on VPET’s learning and teaching are yet to be explored.

**The Need of Innovative Pedagogical Practices**

Currently, there are over 60,000 full-time VET students studying in different trade-specific disciplines in Hong Kong’s VET institutions. Most of the programmes aim to equip students with ‘authentic’ trade-specific and generic competences. And work integrated learning has been a basic requirement in the related curricula. Yet, other than a stronger emphasis on workplace learning, a sector-wide, cross-institutional study of how the learning and teaching pedagogy should be different from that of traditional schooling has been lacking. The salient issue is then the development of appropriate pedagogical approaches that enable the workplaces, in the settings of Hong Kong, to be used as authentic learning environments. The above further brings forward the question that if students are to spend much of their time in the workplaces, having a certain number of learning sessions that do not require them to go back to school, but allow them to be in different workplaces to co-learn together at the same time-slot becomes desirable. For that to be possible, would the effective means of e-learning that takes advantages of the modern technologies be a solution?
Studies have found mobile and flexible learning best connects theories and practices to enrich workplace learning experiences in VET (Smith, 2003, 2006; Stehlik, 2003; Hillier, 2009; Liu, Han & Li, 2010). As early as 2000, Mitchell (2000) observed the emerging of a network-based model of workplace training and realised that there is an increasing use of flexible learning methods involving technology-mediated forms of delivery. To better facilitate learning of different trade disciplines (e.g. nursing, catering, language) in diverse workplaces, a number of studies on the effectiveness of using mobile technologies (Tsang, Yuen & Cheung, 2014), social media and instant messaging (Ng & Leung, 2014), and real time augmented reality (Lee, Lam, Liu et al., 2014; Tang, Pang, Wong, et al., 2014) have been conducted by Hong Kong’s academics to enhance students’ motivation, learning interest, collaborative learning as well as their cognitive, psychomotor and communication skills with promising results. Such kinds of flexible, mobile, web-based and blended-learning tools would allow VET students to review recorded lectures or participate in live-broadcasting learning sessions (e.g. lectures and seminars in schools or conferences) and share their views collaboratively in their own workplaces. In view of the above, it is assumed that appropriate technology enhanced pedagogical approaches utilising mobile and flexible technologies would promote learning and teaching in workplaces and generate mutual benefits between workplace mentors and students for better learning and teaching experiences in the workplaces.

A Study to Address VET Students’ Learning Needs as well as Teachers and Workplace Mentors’ Teaching Practices

However, there is a lack of an in-depth study of VET’s students, teachers and workplace mentors’ learning and teaching needs so as to review, develop and share innovative pedagogical practices, and trade-specific examples of VET across institutions and industries in Hong Kong. A study of that sort would shed light on VET’s learning and teaching needs. It is also best that the findings can be made available on an open platform for a range of VET’s stakeholders (students, teachers, workplace mentors and industry partners) to exchange and share their learning and teaching materials and teaching practices.

Study Design and Methodology

This study comprised three phases. In Phase One, questionnaire surveys (questionnaires attached in Appendices I and II) were conducted to 343 students and 20 teachers of four selected VET programmes (Business and Management, Hotel and Catering, Health Care and Community Services, Servicing) in the participating institutions (VTC, CIHE/CBCC), of which the trade-specific learning and teaching materials would be specially designed for the QESS Project. The aforementioned participants were recommended by the three institutions, and their participations were on voluntary basis. The Phase One data collection was considered as internal data collection within the three institutions before launching the survey to other VET providers. This also enabled the research team to review and refine the questionnaire and interview items.
In Phase Two, eight semi-structured focus group interviews with 60 students, eight individual interviews with teachers, and ten individual interviews with workplace mentors as well as a focus group interview with 20 teachers (respective interview questions are attached in Appendices III, IV and V) were conducted to diagnose the learning and teaching needs of students, teachers, and workplace mentors. Additionally, five class visits (class observation form attached in Appendix VI) were conducted to observe the current teaching effectiveness and document the support and training needs that may be required by students and teachers for the identification of specific instructional strategies to derive innovative pedagogical practices. Thirteen sets of curricular and instructional materials from the participating institutions were also collected for comparison and analysis to generate innovative instructional strategies related to workplace learning (e.g. differentiated instruction, work-integrated learning and assessment, technology enhanced learning in the workplace) for the enhancement of TLPs, specifications and design of the online sharing platform. The above selections were firstly based on the four proposed programme areas of the QESS Project; secondly, the relevance and representation of the VET providers and participants; and thirdly, the feasibility and accessibility of the participating institutions, students, teachers and workplace mentors.

In Phase Three, data collection from other VET providers and the public is to be carried out using online questionnaires (questionnaires attached in Appendices VII, VIII and IX) on the Project’s website. The aim of the online questionnaire surveys is to collect different views and perspectives from other VET providers, students, teachers, workplace mentors and public’s needs for continuous update and improvement. Workplace visits (workplace visit form attached in Appendix VI) are to be conducted in a later stage to diagnose the learning and teaching needs of students and workplace mentors to generate innovative instructional strategies related to workplace learning. The above would also be used to triangulate the findings from the Phase One and Two’s studies.

**Work Schedule of the Study**

<table>
<thead>
<tr>
<th>Phase One</th>
<th>November 2015 to January 2016</th>
<th>• Conducted internal questionnaire surveys</th>
</tr>
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<tbody>
<tr>
<td>Phase Two</td>
<td>February 2016</td>
<td>• Conducted interviews, class visits, and compare curricular and instructional materials</td>
</tr>
<tr>
<td>Phase Three</td>
<td>February 2016 onwards</td>
<td>• Conducted online questionnaire surveys and workplace visits</td>
</tr>
</tbody>
</table>

**Data Analysis**

Collected data were used for multi-dimensional and multi-level analysis. The questionnaire results were analysed quantitatively and qualitatively while the interviews and focus groups were analysed qualitatively. Making reference to the analysis of the findings, suitable e-learning means for more effective learning and teaching for VET were formulated to accommodate the needs of students, teachers and workplace mentors.
Findings

Phase One
Phase one consisted of the responses of questionnaire survey from 343 students (145 from VTC and 198 from CIHE and CBCC) and 20 teachers (13 from VTC and seven from CIHE and CBCC) to examine learning needs and teaching practices. It also aims to draw views on introducing innovative pedagogical practices involving technology-mediated forms of delivery. Before the distribution of the questionnaires, a ten-minute PowerPoint briefing (Appendix X) was conducted to the respective participants to explain the Project, the aims of the questionnaire survey, the concept of TEL and the various innovative learning and teaching activities.

1. Questionnaire Survey for Students
The questionnaire survey for the 343 students contained three parts: Part One’s five questions were related to Learning Practices. Part Two’s six questions addressed Learning Needs and Preferences while Part Three’s two questions tackled Learning Support. All questionnaire items were on a 6-point Likert Scale (1 for Strongly Disagree / Never to 6 for Strongly Agree / Always).

Part One: Learning Practices
Responses rated from scale 4 to 6 to the questionnaire items revealed that lecture and the use of lecture notes were prevailing (90%, N=305) while less than half of the students agreed that e-learning / technology activities were frequently used (40%, N=134) when compared with other learning and teaching activities. Over half of the students (66.5%, N=226) expressed their views that they would need greater flexibility, accessibility and convenience and did not want to be bound by time and space when studying. They preferred to use both printed materials (78.6%, N=269) and online resources (63.4%, N=217) provided and recommended by teachers and peers. It was also noticed that only one-third of the students (35.1%, N=120) preferred to prepare their own online resources for study. Most of the students (70.1%, N=239) said they would use mobile devices (e.g. smartphones, tablet pc) for learning. A majority of the students (83%, N=283) said that they would ask peers and teachers (64.6%, N=221) for help when encountering problems in study. A majority of the students (87.7%, N=300) expressed that they learnt knowledge (e.g. theories, concepts, principles procedures, rules) in the classroom followed by application of knowledge (78.1%, N=267) and trade-specific skills (e.g. hands-on practice, techniques, demonstration) (72.4%, N=246). Both work etiquette (work attitudes, work ethics, value) and analysis of problems were rated the lowest when learning in classroom. For learning in industrial attachment (IA) or work placement, students rated work etiquette (work attitudes, work ethics, value) the highest (67.7%, N=216) followed by trade-specific skills (e.g. hands-on practice, techniques, demonstration) (63.9%, N=204) and application of knowledge (59.6%, N=190). Analysis of problem (59.9%, N=191) and knowledge (e.g. theories, concepts, principles procedures, rules) (59.2%, N=189) were rated the lowest. A summary of the above is shown in Table 1. Other qualitative feedback included citing Moodle as one of their frequently used e-learning activity.
Table 1: Responses in Part One: Learning Practices

<table>
<thead>
<tr>
<th>No.</th>
<th>Items</th>
<th>% of 6 Strongly agree/Always</th>
<th>% of 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.1</td>
<td>How often are the following teaching and learning activities (TLA) used in the classroom?</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>% of 4</td>
<td>% of 3</td>
</tr>
<tr>
<td>a</td>
<td>Lecture</td>
<td>53.1%</td>
<td>180</td>
</tr>
<tr>
<td>b</td>
<td>Demonstrations</td>
<td>3.5%</td>
<td>12</td>
</tr>
<tr>
<td>c</td>
<td>Hands-on practices</td>
<td>6.2%</td>
<td>21</td>
</tr>
<tr>
<td>d</td>
<td>Tutorials</td>
<td>21.1%</td>
<td>71</td>
</tr>
<tr>
<td>e</td>
<td>e-learning/ Use of technology activities</td>
<td>7.5%</td>
<td>25</td>
</tr>
</tbody>
</table>

| 1.2 | How often do you the following when you study your modules?          |
|     | I do pre-reading and other preparation before class.                 | 1.8%  | 6      | 5.6%  | 19  | 22.3% | 76    | 36.1% | 123 | 22.6% | 77 | 11.7% | 40 | 343 | 341 |
|     | I do revision after class.                                           | 5.0%  | 17     | 16.7% | 57  | 28.2% | 96    | 31.7% | 108 | 13.8% | 47 | 4.7%  | 16 | 343 | 341 |
|     | I study on a fixed study schedule I set for myself.                  | 2.9%  | 10     | 9.1%  | 31  | 20.8% | 71    | 35.5% | 121 | 19.4% | 66 | 12.3% | 42 | 343 | 341 |
|     | I do not follow a fixed study schedule, but just study at a time and place I find appropriate. | 15.9% | 54     | 21.8% | 74  | 28.8% | 98    | 19.4% | 66  | 8.2%  | 28 | 5.9%  | 20 | 343 | 340 |

| 1.3 | How often do you use the following means in your study?              |
|     | I study with printed materials other people have prepared (e.g. notes provided by the teacher, notes prepared by other students, textbooks recommended by the teacher) | 32.7% | 112    | 26.3% | 90  | 19.6% | 67    | 13.5% | 46  | 5.0%  | 17 | 2.9%  | 10 | 343 | 342 |
|     | I study with printed materials I have prepared myself (e.g. class notes I took in class, notes prepared by myself) | 12.6% | 43     | 22.8% | 78  | 26.3% | 90    | 21.1% | 72  | 10.2% | 35 | 7.0%  | 24 | 343 | 342 |
|     | I use online resources provided/recommended by others (e.g. online notes provided by the teacher or prepared by other students, online resources recommended by the teacher or other students). | 15.5% | 53     | 17.5% | 60  | 30.4% | 104   | 21.9% | 75  | 8.2%  | 28 | 6.4%  | 22 | 343 | 342 |
|     | I use online resources prepared by myself (e.g. online notes I prepare, online resources I found.) | 4.7%  | 16     | 7.6%  | 26  | 22.8% | 78    | 28.4% | 97  | 20.8% | 71 | 15.8% | 54 | 343 | 342 |
|     | I use mobile devices (e.g. smartphone, tablet pc for learning.)      | 18.8% | 64     | 27.6% | 94  | 23.8% | 81    | 18.8% | 64  | 5.6%  | 19 | 5.6%  | 19 | 343 | 341 |
|     | I ask teachers for help when I don’t understand.                     | 10.5% | 36     | 21.3% | 73  | 32.7% | 112   | 24.0% | 82  | 8.8%  | 30 | 2.6%  | 9  | 343 | 342 |
|     | I ask peers for help when I don’t understand.                        | 17.6% | 60     | 35.5% | 121 | 29.9% | 102   | 9.7%  | 33  | 4.1%  | 14 | 3.2%  | 11 | 343 | 341 |
|     | I study alone and I try to find answers by myself.                   | 20.0% | 68     | 30.6% | 104 | 28.2% | 96    | 15.0% | 51  | 3.8%  | 13 | 2.4%  | 8  | 343 | 340 |

| 1.4 | What do you learn in the classroom?                                  |
|     | Knowledge (e.g. theories, concepts, principles, procedures, rules)   | 28.1% | 96     | 40.9% | 140 | 18.7% | 64    | 9.4%  | 32  | 1.8%  | 6 | 1.2%  | 4  | 343 | 342 |
|     | Trade-specific Skills (e.g. hands-on practice, techniques, demonstration) | 14.4% | 49     | 28.5% | 97  | 29.4% | 100   | 18.8% | 64  | 5.9%  | 20 | 2.9%  | 10 | 343 | 340 |
|     | Workplace Etiquette (e.g. work attitudes, work ethics, values)       | 12.6% | 43     | 26.3% | 90  | 32.5% | 111   | 20.2% | 69  | 6.4%  | 22 | 2.0%  | 7  | 343 | 342 |
|     | Application of knowledge                                            | 11.7% | 40     | 26.3% | 90  | 40.1% | 137   | 15.2% | 52  | 4.7%  | 16 | 2.0%  | 7  | 343 | 342 |
|     | Analysis of problems                                                | 10.9% | 37     | 25.5% | 87  | 37.8% | 129   | 18.2% | 62  | 6.2%  | 21 | 1.5%  | 5  | 343 | 341 |

| 1.5 | What do you learn in industrial attachment (IA) or work placement?   |
|     | Knowledge (e.g. theories, concepts, principles, procedures, rules)   | 10.0% | 32     | 22.3% | 71  | 27.0% | 86    | 13.8% | 44  | 5.6%  | 18 | 21.3% | 68 | 343 | 319 |
|     | Trade-specific Skills (e.g. hands-on practice, techniques, demonstration) | 17.6% | 56     | 28.5% | 91  | 17.9% | 57    | 11.6% | 37  | 3.1%  | 10 | 21.3% | 68 | 343 | 319 |
|     | Workplace Etiquette (e.g. work attitudes, work ethics, values)       | 17.9% | 57     | 29.5% | 94  | 20.4% | 65    | 7.8%  | 25  | 3.1%  | 10 | 21.3% | 68 | 343 | 319 |
|     | Application of knowledge                                            | 12.9% | 41     | 22.3% | 71  | 24.5% | 78    | 14.4% | 46  | 4.4%  | 14 | 21.6% | 69 | 343 | 319 |
|     | Analysis of problems                                                | 11.9% | 38     | 23.2% | 74  | 24.8% | 79    | 13.5% | 43  | 4.1%  | 13 | 22.6% | 72 | 343 | 319 |
Responses rated from scale 4 to 6 to the questionnaire items revealed that a majority of the students liked to watch real life demonstration (88%, N=302), followed by hands-on practice (84.2%, N=287) and guidance from teacher or workplace mentor (83.4%, N=286). Most students liked visuals (e.g. videos, graphs, images, pictures, table charts) (82.5%, N=283) rather than listen to lecture (67.3%, N=231) and read words / text (62.1%, N=213). Responses also indicated that students generally liked to watch online demonstration (75.7%, N=259). When encountering problems in study, a majority of the students would search information online (86.6%, N=297) followed by reading notes and textbooks by themselves (87.2%, N=299). They would also ask peers for help (83.4%, N=286) and use their own logical deduction (77.6% N=266) rather than ask teachers or workplace mentor for help (71.4%, N=245). When asking students’ learning difficulties, most of them rated applying theories to practice the highest (73.5%, N=252) followed by understanding theories (70.6%, N=242). On the contrary, students found doing hands-on practice less difficult (55.6%, N=185). When confronting difficulties in study, students revealed that it was easy for them to find useful online information (83.4%, N=286) than to seek help from teacher or workplace mentor (69.8%, N=238). In general, students found printed PowerPoint slides (80.4%, N=274), face-to-face tutorials (72.4%, N=247) and textbooks (67.5%, N=231) helped them prepare for examination. When compared to the above, online materials with activities/exercises (61.8%, N=210), video clips with quizzes (60.5%, N=207) and video recordings (55.1%, N=188) were rated lower. Similar to the above findings, when asking what made it easier for them to learn confusing and difficult topics, students rated face-to-face tutorials (71.1%, N=243) the highest, followed by printed PowerPoint slides (69.4%, N=238), textbooks (65%, N=221). When compared to the above, online materials with activities / exercises (59.1%, N=201), video clips with quizzes (59.4%, N=203) and video recordings (52.2%, N=179) were less preferred by the students. A summary of the above is shown in Table 2. Other qualitative feedback included the inadequacy of subject contents and not able to catch up with teacher’s fast teaching pace.

Table 2: Responses in Part Two: Learning Needs and Preferences

<table>
<thead>
<tr>
<th>No.</th>
<th>Items</th>
<th>% of 6</th>
<th>% of 5</th>
<th>% of 4</th>
<th>% of 3</th>
<th>% of 2</th>
<th>% of 1</th>
<th>Form received</th>
<th>Valid Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.1</td>
<td>How do you like to learn?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a</td>
<td>I like reading words/text.</td>
<td>12.5%</td>
<td>43</td>
<td>19.8%</td>
<td>68</td>
<td>29.7%</td>
<td>102</td>
<td>23.6% 81</td>
<td>7.9% 27</td>
</tr>
<tr>
<td>b</td>
<td>I like listening to lecture.</td>
<td>6.4%</td>
<td>22</td>
<td>22.7%</td>
<td>78</td>
<td>38.2%</td>
<td>131</td>
<td>21.0% 72</td>
<td>7.9% 27</td>
</tr>
<tr>
<td>c</td>
<td>I like visuals, (e.g. videos, graphs, images, pictures, tables, charts)</td>
<td>18.7%</td>
<td>64</td>
<td>38.2%</td>
<td>131</td>
<td>25.7%</td>
<td>88</td>
<td>12.0% 41</td>
<td>2.6% 9</td>
</tr>
<tr>
<td>d</td>
<td>I like hands-on practice.</td>
<td>24.9%</td>
<td>85</td>
<td>32.8%</td>
<td>112</td>
<td>26.4%</td>
<td>90</td>
<td>11.7% 40</td>
<td>2.1% 7</td>
</tr>
<tr>
<td>e</td>
<td>I like sharing with others what I know.</td>
<td>11.7%</td>
<td>40</td>
<td>27.7%</td>
<td>95</td>
<td>32.9%</td>
<td>113</td>
<td>18.4% 63</td>
<td>7.6% 26</td>
</tr>
<tr>
<td>f</td>
<td>I like to study in pairs or groups.</td>
<td>13.7%</td>
<td>47</td>
<td>31.9%</td>
<td>109</td>
<td>27.2%</td>
<td>93</td>
<td>14.6% 50</td>
<td>7.0% 24</td>
</tr>
<tr>
<td>g</td>
<td>I like to have teacher or workplace mentor guidance.</td>
<td>19.0%</td>
<td>65</td>
<td>37.0%</td>
<td>127</td>
<td>27.4%</td>
<td>94</td>
<td>12.8% 44</td>
<td>2.9% 10</td>
</tr>
<tr>
<td>h</td>
<td>I like to watch real-life demonstration.</td>
<td>29.2%</td>
<td>100</td>
<td>34.7%</td>
<td>119</td>
<td>24.2%</td>
<td>83</td>
<td>9.3% 32</td>
<td>2.0% 7</td>
</tr>
<tr>
<td>i</td>
<td>I like to watch online demonstration. (e.g. video clips, YouTube)</td>
<td>16.7%</td>
<td>57</td>
<td>33.6%</td>
<td>115</td>
<td>25.4%</td>
<td>87</td>
<td>17.0% 58</td>
<td>3.5% 12</td>
</tr>
<tr>
<td>j</td>
<td>I like to study at a scheduled and fixed time.</td>
<td>8.2%</td>
<td>28</td>
<td>16.4%</td>
<td>56</td>
<td>27.2%</td>
<td>93</td>
<td>26.9% 92</td>
<td>11.4% 39</td>
</tr>
</tbody>
</table>
2.2 What do you do when have problems in study?

- **a.** I ask the teacher or workplace mentor for help. 13.1% 45 21.6% 74 36.7% 126 21.6% 74 5.5% 19 1.5% 5 343 343
- **b.** I ask my peers for help. 21.0% 72 34.1% 117 28.3% 97 11.1% 38 4.4% 15 1.2% 4 343 343
- **c.** I use my own logical deduction. 13.4% 46 32.4% 111 31.8% 109 17.8% 61 3.8% 13 0.9% 3 343 343

2.3 What are your learning difficulties?

- **a.** Understanding theories 12.2% 42 27.7% 95 30.6% 105 21.0% 72 4.1% 14 4.4% 15 343 343
- **b.** Applying theories to practice 12.0% 41 27.4% 94 34.1% 117 18.7% 64 5.6% 17 2.9% 10 343 343
- **c.** Understanding what is expected in the assessment 9.0% 31 23.9% 82 31.5% 108 23.6% 81 8.7% 30 3.2% 11 343 343
- **d.** Following the teacher’s instructions 4.7% 16 19.9% 68 29.9% 102 27.0% 92 12.9% 44 5.6% 19 343 343
- **e.** Doing hands-on practice 4.2% 14 12.9% 43 38.4% 128 25.5% 85 12.3% 41 6.6% 22 343 333

2.4 How do you find help when you have difficulties in your study?

- **a.** I usually understand well what the teacher says in the classroom. 4.1% 14 19.5% 67 47.8% 164 22.2% 76 5.0% 17 1.5% 5 343 343
- **b.** I am often able to find help when I don’t understand. 13.7% 47 31.5% 108 35.9% 123 16.0% 55 1.7% 6 1.2% 4 343 343
- **c.** The teacher or workplace mentor is often easy to find when I need help from them. 10.0% 34 26.1% 89 33.7% 115 21.4% 73 7.0% 24 1.8% 6 343 343

2.5 helped me prepare for the examination?

- **a.** Printed PowerPoint slides 24.9% 85 32.8% 112 22.6% 77 13.5% 46 4.7% 16 1.5% 5 343 343
- **b.** Textbooks 16.4% 56 22.4% 80 27.8% 95 19.0% 65 8.2% 28 5.3% 18 343 343
- **c.** Video clips with quizzes 8.8% 30 21.9% 75 29.8% 102 23.7% 81 10.5% 36 5.3% 18 343 343
- **d.** Online materials with activities/exercises 10.0% 34 21.8% 74 30.0% 102 24.1% 82 8.5% 29 5.6% 19 343 340

2.6 made it easier for me to learn confusing and difficult topics.

- **a.** Printed PowerPoint slides 14.6% 50 26.8% 92 28.0% 96 20.7% 71 7.6% 26 2.3% 8 343 343
- **b.** Textbooks 13.8% 47 22.1% 75 29.1% 99 19.4% 66 10.6% 36 5.0% 17 343 340
- **c.** Video clips with quizzes 6.7% 23 23.1% 79 29.5% 101 24.0% 82 11.7% 40 5.0% 17 343 342
- **d.** Online materials with activities/exercises 7.6% 26 22.1% 75 29.4% 100 27.4% 93 10.3% 35 3.2% 11 343 340

Part Three: Learning Support

Responses rated from scale 4 to 6 to the questionnaire items revealed that most students regarded study partner or group as useful in support learning (71.8%, N=245), more practical hours (58.3%, N=200) and more extended reading references (56%, N=192). The rating of longer class time as learning support was comparatively low (20.1%, N=69). In priorities, they would like to have reading references (74.1%, N=254), online exercise (71.6%, N=244), lecture videos (67.9%, N=233), online assessment (67.1%, N=230), demonstration video (66.2%, N=227), social media chat (62.7%, N=215) and learning games (61.2%, N=210). Students found online questionnaire survey least desirable (48.5%, N=163). A high percentage of responses (82.2%, N=281) suggested that students found mobile devices flexible and convenient (e.g. smartphone, tablet pc) and over half of them would like mobile apps for easy connection to the internet for study (67.1%, N=228). They also wished to have more mobile learning activities for their subject (77.5%,
They rated augmented reality (AR) (75.2%, N=258) the most preferred mobile learning activities followed by virtual reality (VR) (73.3%, N=250), reading references (71.1%, N=244), online exercise (70.7%, N=241), demonstration videos (67%, N=229), online assessment (67%, N=229), lecture videos (66%, N=225), social media chat (63.8%, N=217), learning games (61.3%, N=209) and video conferencing (56.5%, N=192). They also found online questionnaire survey least preferable as mobile learning activities (53.7%, N=182). Overall, most of the students (75.3%, N=256) agreed that mobile learning / technology would be helpful to their study. A summary of the above is shown in Table 3. Other qualitative feedback included an increase of tutorial hours, more communication channels between teachers and students, uploading lectures for review, using e-learning / technology activities for self-learning to facilitate understanding of theories, procedures and analytical skills. It was also noted that students were also concerned about the convenience and accessibility of mobile learning and also the merits of reducing unnecessary printed matters. Some students also expressed that not everybody owned a personal computer. They further mentioned that the use of printed matters and notes jotting was better for memorising the contents.

Table 3: Responses in Part Three: Learning Support

<table>
<thead>
<tr>
<th>No.</th>
<th>Items</th>
<th>% of 6</th>
<th>% of 5</th>
<th>% of 4</th>
<th>% of 3</th>
<th>% of 2</th>
<th>Form received</th>
<th>Valid Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.1</td>
<td>Do you think the following learning support is useful to you?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a</td>
<td>Longer class time</td>
<td>20.6%</td>
<td>30.9%</td>
<td>50.6%</td>
<td>89.4%</td>
<td>3.3%</td>
<td>11.7%</td>
<td>343</td>
</tr>
<tr>
<td>b</td>
<td>More extended reading references</td>
<td>10.2%</td>
<td>35.8%</td>
<td>45.4%</td>
<td>36.3%</td>
<td>22.8%</td>
<td>30.3%</td>
<td>343</td>
</tr>
<tr>
<td>c</td>
<td>More practice hours</td>
<td>9.3%</td>
<td>32.2%</td>
<td>51.8%</td>
<td>23.3%</td>
<td>8.2%</td>
<td>10.2%</td>
<td>343</td>
</tr>
<tr>
<td>d</td>
<td>More industrial attachment and work placement</td>
<td>15.5%</td>
<td>53.3%</td>
<td>40.2%</td>
<td>20.3%</td>
<td>7.8%</td>
<td>27.3%</td>
<td>343</td>
</tr>
<tr>
<td>e</td>
<td>Study partner or group</td>
<td>12.6%</td>
<td>60.4%</td>
<td>25.2%</td>
<td>17.9%</td>
<td>9.1%</td>
<td>5.6%</td>
<td>343</td>
</tr>
<tr>
<td>3.2</td>
<td>Do e-learning/technology activities help with your study?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a</td>
<td>The school e-learning platform is helpful for my study (e.g. Moodle, WebCT, Blackboard)</td>
<td>7.3%</td>
<td>25.5%</td>
<td>59.1%</td>
<td>30.7%</td>
<td>29.2%</td>
<td>10.2%</td>
<td>343</td>
</tr>
<tr>
<td>b</td>
<td>I wish to have more online learning activities for my subject</td>
<td>9.4%</td>
<td>32.5%</td>
<td>18.7%</td>
<td>32.2%</td>
<td>26.0%</td>
<td>6.4%</td>
<td>22</td>
</tr>
<tr>
<td>c</td>
<td>I wish the online learning and teaching activities can have:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>c_i</td>
<td>reading references</td>
<td>15.7%</td>
<td>54.2%</td>
<td>24.4%</td>
<td>17.5%</td>
<td>5.0%</td>
<td>17.5%</td>
<td>343</td>
</tr>
<tr>
<td>c_ii</td>
<td>lecture videos</td>
<td>18.1%</td>
<td>62.2%</td>
<td>25.9%</td>
<td>19.8%</td>
<td>20.1%</td>
<td>4.7%</td>
<td>31</td>
</tr>
<tr>
<td>c_iii</td>
<td>video conferencing</td>
<td>7.6%</td>
<td>26.4%</td>
<td>17.5%</td>
<td>26.3%</td>
<td>12.0%</td>
<td>7.9%</td>
<td>27</td>
</tr>
<tr>
<td>c_iv</td>
<td>demonstration</td>
<td>12.8%</td>
<td>44.5%</td>
<td>31.3%</td>
<td>19.8%</td>
<td>8.2%</td>
<td>5.8%</td>
<td>20</td>
</tr>
<tr>
<td>c_v</td>
<td>learning games</td>
<td>14.0%</td>
<td>61.0%</td>
<td>21.0%</td>
<td>27.3%</td>
<td>19.5%</td>
<td>10.2%</td>
<td>31</td>
</tr>
<tr>
<td>c_vi</td>
<td>online exercise</td>
<td>17.9%</td>
<td>61.0%</td>
<td>26.4%</td>
<td>27.3%</td>
<td>5.9%</td>
<td>5.6%</td>
<td>19</td>
</tr>
<tr>
<td>c_vii</td>
<td>online assessment</td>
<td>15.5%</td>
<td>53.3%</td>
<td>25.4%</td>
<td>26.2%</td>
<td>21.9%</td>
<td>5.5%</td>
<td>19</td>
</tr>
<tr>
<td>c_viii</td>
<td>social media chat</td>
<td>13.1%</td>
<td>45.0%</td>
<td>20.7%</td>
<td>28.9%</td>
<td>19.5%</td>
<td>6.1%</td>
<td>21</td>
</tr>
<tr>
<td>c_ix</td>
<td>questionnaire survey</td>
<td>8.3%</td>
<td>28.3%</td>
<td>13.7%</td>
<td>26.3%</td>
<td>15.2%</td>
<td>10.1%</td>
<td>34</td>
</tr>
<tr>
<td>d</td>
<td>I think e-learning/technology activities have been useful to my study.</td>
<td>9.4%</td>
<td>32.6%</td>
<td>25.6%</td>
<td>33.8%</td>
<td>20.0%</td>
<td>3.2%</td>
<td>11</td>
</tr>
<tr>
<td>f</td>
<td>I find flexibility and convenience of using mobile devices in my study. (e.g. smartphone, tablet pc)</td>
<td>23.7%</td>
<td>81.0%</td>
<td>29.5%</td>
<td>28.9%</td>
<td>12.9%</td>
<td>2.9%</td>
<td>7</td>
</tr>
<tr>
<td>g</td>
<td>I wish to have mobile apps for my subject so that I do not need to connect to the Internet</td>
<td>19.4%</td>
<td>66.3%</td>
<td>20.3%</td>
<td>27.4%</td>
<td>18.2%</td>
<td>8.8%</td>
<td>20</td>
</tr>
</tbody>
</table>

N=248. No of students who filled in the questionnaires.
Summary of the Findings from the Questionnaire Survey for Students

• Lecture and the use of lecture notes were prevailing in current learning and teaching practices.

• The least conducted learning and teaching activities was e-learning / use of technology among other teaching and learning activities.

• Students needed great flexibility, accessibility and convenience when studying. They did not want to be confined by time and space.

• Using mobile devices in study became very popular.

• Students found mobile devices flexible and convenient (e.g. smartphone, tablet pc) and over half of them would like mobile apps for easy connection to the internet for study.

• Searching information online became the most popular way to solve learning problems.

• Watching real-life demo, having more hands-on practice and the guidance from teachers and workplace mentors were students’ most favorable ways of learning, yet students found them not enough.

• Most students liked visuals (e.g. videos, graphs, images, pictures, table charts) rather than listen to lecture and read words / text.

• AR was the most preferred mobile learning activities followed by VR, reading references, online exercise, demonstration videos, online assessment, lecture videos, social media chat and video conferencing.

• Students preferred peers collaborative learning as well as social media chat.

• Students were rather passive in seeking help from teachers or workplace mentors.

• Students tended to learn / study using online information, yet just around half of them found the school e-learning platform very useful.

• Some students mentioned the use of printed matters and notes jotting were better for memorising the contents.
2. Questionnaire Survey for Teachers

The questionnaire survey for the 20 teachers contained four parts. Part One consisted of one question for General Information. Part Two’s four questions related to Teaching Practices. Part Three’s four questions addressed Teaching Needs and Preferences and Part Four’s two questions tackled Teaching Support. All questionnaire items were on a 6-point Likert Scale (1 for Strongly Disagree / Never to 6 for Strongly Agree / Always).

Part One: General Information

Data from Part One: General Information indicated that all the teachers (100%, N=20) were engaged in teaching. Most of them (94.4%, N=17) also wrote module syllabus and were module coordinators (80%, N=16). Most of them (70%, N=14) were responsible for students’ IA / work placement matters and also worked with workplace mentors (75%, N=15). A summary of the above is shown in Table 4.

Table 4: Responses in Part One: General Information

<table>
<thead>
<tr>
<th>No</th>
<th>Items</th>
<th>%</th>
<th>Yes</th>
<th>%</th>
<th>No</th>
<th>Form Received</th>
<th>Valid Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.1</td>
<td>What are your roles in your institute?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>a I teach classes of students (including student assessment).</td>
<td>100.0</td>
<td>20</td>
<td>0.0</td>
<td>0</td>
<td>20</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td>b I also write module syllabus.</td>
<td>94.4</td>
<td>17</td>
<td>5.6</td>
<td>1</td>
<td>20</td>
<td>18</td>
</tr>
<tr>
<td></td>
<td>c I am also a module coordinator.</td>
<td>80.0</td>
<td>16</td>
<td>20.0</td>
<td>4</td>
<td>20</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td>d I am also the programme coordinator.</td>
<td>36.8</td>
<td>7</td>
<td>63.2</td>
<td>12</td>
<td>20</td>
<td>19</td>
</tr>
<tr>
<td></td>
<td>e I am also responsible for student industrial attachment (IA)/work placement matters.</td>
<td>70.0</td>
<td>14</td>
<td>30.0</td>
<td>6</td>
<td>20</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td>f I also work with workplace mentor(s).</td>
<td>75.0</td>
<td>15</td>
<td>25.0</td>
<td>5</td>
<td>20</td>
<td>20</td>
</tr>
</tbody>
</table>

Part Two: Teaching Practices

Responses rated from scale 4 to 6 to the questionnaire items indicated that lectures were the most frequent teaching and learning activities amongst all teachers (100%, N=20) followed by demonstrations (75%, N=15), hands-on practices (75%, N=15) while the least conducted one was e-learning / technology activities (50%, N=9). All of the teachers prepared the lesson by themselves before class (100%, N=20) and a majority of them searched online for teaching references (90%, N=18) as well as went to the library for teaching references (75%, N=15). A majority of the teachers kept in touch with students after class (85%, N=17) and over half of the teachers also communicated with students via online social media (e.g. Facebook, WeChat, WhatsApp) (60%, N=12). Most of the teachers gave notes to students (75%, N=15) and used multimedia (e.g. videos, websites, YouTube) in class (68.4%, N=13). A majority of the teachers (84.2%, N=16) rated from scale 1 to 3 preferred not to capture or record their lectures, and let their students view them afterwards. All teachers (100%, N=20) said that they taught knowledge (e.g. theories, concepts, principles, procedures, rules) and analysis of problems (100%, N=20) in class followed by application of knowledge (100%, N=20) and trade-specific skills (e.g. hands-on practice, techniques, demonstration) (95%, N=19) while the least they taught in class was etiquette (e.g. work attitudes, work ethics, values) (85%, N=17). On the contrary, all teachers said that students learnt work etiquette in IA or workplace attachment followed by knowledge (94.7%, ...
N=18), application of knowledge (94.7%, N=18) and trade-specific skills (94.7%, N=18). A summary of the above is shown in Table 5.

Table 5: Responses in Part Two: Teaching Practices

<table>
<thead>
<tr>
<th>No.</th>
<th>Items</th>
<th>Strongly agree/Always</th>
<th>% of 5</th>
<th>% of 4</th>
<th>% of 3</th>
<th>% of 2</th>
<th>Strongly disagree/Never</th>
<th>Form received</th>
<th>Valid Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.1</td>
<td>How often do you carry out the following teaching and learning activities TLA in the classroom?</td>
<td></td>
<td>14</td>
<td>10.0%</td>
<td>2</td>
<td>20.0%</td>
<td>4</td>
<td>0.0%</td>
<td>0</td>
</tr>
<tr>
<td>a</td>
<td>Give lectures</td>
<td>66.0%</td>
<td>8</td>
<td>10.0%</td>
<td>2</td>
<td>25.0%</td>
<td>5</td>
<td>20.0%</td>
<td>4</td>
</tr>
<tr>
<td>b</td>
<td>Offer demonstrations</td>
<td>70.0%</td>
<td>8</td>
<td>10.0%</td>
<td>2</td>
<td>25.0%</td>
<td>5</td>
<td>20.0%</td>
<td>4</td>
</tr>
<tr>
<td>c</td>
<td>Provide hands-on practices</td>
<td>60.0%</td>
<td>8</td>
<td>10.0%</td>
<td>2</td>
<td>40.0%</td>
<td>8</td>
<td>10.0%</td>
<td>2</td>
</tr>
<tr>
<td>d</td>
<td>Conduct e-learning/technology activities</td>
<td>65.0%</td>
<td>1</td>
<td>22.2%</td>
<td>4</td>
<td>22.2%</td>
<td>4</td>
<td>22.2%</td>
<td>4</td>
</tr>
<tr>
<td>2.2</td>
<td>How often do you use the following activities in your teaching?</td>
<td></td>
<td>14</td>
<td>10.0%</td>
<td>2</td>
<td>20.0%</td>
<td>4</td>
<td>0.0%</td>
<td>0</td>
</tr>
<tr>
<td>a</td>
<td>I give notes to students.</td>
<td>40.0%</td>
<td>8</td>
<td>0.0%</td>
<td>0</td>
<td>35.0%</td>
<td>7</td>
<td>10.0%</td>
<td>2</td>
</tr>
<tr>
<td>b</td>
<td>I use multimedia in class.</td>
<td>21.1%</td>
<td>5</td>
<td>21.1%</td>
<td>4</td>
<td>15.8%</td>
<td>3</td>
<td>5.3%</td>
<td>1</td>
</tr>
<tr>
<td>c</td>
<td>I capture or record my lectures, and let my students view them afterwards.</td>
<td>20.0%</td>
<td>6</td>
<td>35.0%</td>
<td>7</td>
<td>20.0%</td>
<td>4</td>
<td>15.0%</td>
<td>3</td>
</tr>
<tr>
<td>d</td>
<td>I keep in touch with students after class.</td>
<td>85.0%</td>
<td>12</td>
<td>25.0%</td>
<td>5</td>
<td>15.0%</td>
<td>3</td>
<td>0.0%</td>
<td>0</td>
</tr>
<tr>
<td>e</td>
<td>I communicate with students via online social network. (e.g. Facebook, WeChat, WhatsApp)</td>
<td>75.0%</td>
<td>12</td>
<td>25.0%</td>
<td>5</td>
<td>20.0%</td>
<td>4</td>
<td>5.0%</td>
<td>1</td>
</tr>
<tr>
<td>f</td>
<td>I prepare my lesson before class alone.</td>
<td>40.0%</td>
<td>8</td>
<td>0.0%</td>
<td>0</td>
<td>35.0%</td>
<td>7</td>
<td>10.0%</td>
<td>2</td>
</tr>
<tr>
<td>g</td>
<td>I prepare my lesson before class with colleagues.</td>
<td>21.1%</td>
<td>5</td>
<td>21.1%</td>
<td>4</td>
<td>26.3%</td>
<td>5</td>
<td>21.1%</td>
<td>4</td>
</tr>
<tr>
<td>h</td>
<td>I go to the library to look for teaching references.</td>
<td>65.0%</td>
<td>12</td>
<td>25.0%</td>
<td>5</td>
<td>20.0%</td>
<td>4</td>
<td>5.0%</td>
<td>1</td>
</tr>
<tr>
<td>i</td>
<td>I search online for teaching references.</td>
<td>40.0%</td>
<td>8</td>
<td>30.0%</td>
<td>6</td>
<td>20.0%</td>
<td>4</td>
<td>5.0%</td>
<td>1</td>
</tr>
<tr>
<td>2.3</td>
<td>What do you teach in class?</td>
<td></td>
<td>14</td>
<td>10.0%</td>
<td>2</td>
<td>20.0%</td>
<td>4</td>
<td>0.0%</td>
<td>0</td>
</tr>
<tr>
<td>a</td>
<td>Knowledge (e.g. theories, concepts, principles, procedures, rules)</td>
<td>65.0%</td>
<td>13</td>
<td>20.0%</td>
<td>4</td>
<td>15.0%</td>
<td>3</td>
<td>0.0%</td>
<td>0</td>
</tr>
<tr>
<td>b</td>
<td>Trade-specific skills (e.g. hands-on practice, techniques, demonstration)</td>
<td>35.0%</td>
<td>7</td>
<td>40.0%</td>
<td>8</td>
<td>20.0%</td>
<td>4</td>
<td>5.0%</td>
<td>1</td>
</tr>
<tr>
<td>c</td>
<td>Workplace Etiquette (e.g. work attitudes, work ethics, values)</td>
<td>20.0%</td>
<td>4</td>
<td>30.0%</td>
<td>6</td>
<td>35.0%</td>
<td>7</td>
<td>10.0%</td>
<td>2</td>
</tr>
<tr>
<td>d</td>
<td>Application of knowledge</td>
<td>45.0%</td>
<td>9</td>
<td>30.0%</td>
<td>6</td>
<td>25.0%</td>
<td>5</td>
<td>0.0%</td>
<td>0</td>
</tr>
<tr>
<td>e</td>
<td>Analysis of problems</td>
<td>50.0%</td>
<td>10</td>
<td>25.0%</td>
<td>5</td>
<td>25.0%</td>
<td>5</td>
<td>0.0%</td>
<td>0</td>
</tr>
<tr>
<td>2.4</td>
<td>What do your students learn in industrial attachment (IA) or work placement?</td>
<td></td>
<td>14</td>
<td>10.0%</td>
<td>2</td>
<td>20.0%</td>
<td>4</td>
<td>0.0%</td>
<td>0</td>
</tr>
<tr>
<td>a</td>
<td>Knowledge (e.g. theories, concepts, principles, procedures, rules)</td>
<td>26.3%</td>
<td>5</td>
<td>36.8%</td>
<td>7</td>
<td>31.6%</td>
<td>6</td>
<td>5.3%</td>
<td>1</td>
</tr>
<tr>
<td>b</td>
<td>Trade-specific skills (e.g. hands-on practice, techniques, demonstration)</td>
<td>21.1%</td>
<td>4</td>
<td>47.4%</td>
<td>9</td>
<td>31.6%</td>
<td>6</td>
<td>0.0%</td>
<td>0</td>
</tr>
<tr>
<td>c</td>
<td>Workplace Etiquette (e.g. work attitudes, work ethics, values)</td>
<td>26.3%</td>
<td>5</td>
<td>21.1%</td>
<td>4</td>
<td>47.4%</td>
<td>9</td>
<td>0.0%</td>
<td>0</td>
</tr>
<tr>
<td>d</td>
<td>Application of knowledge</td>
<td>26.3%</td>
<td>5</td>
<td>42.1%</td>
<td>8</td>
<td>31.6%</td>
<td>6</td>
<td>0.0%</td>
<td>0</td>
</tr>
<tr>
<td>e</td>
<td>Analysis of problems</td>
<td>26.3%</td>
<td>5</td>
<td>31.6%</td>
<td>6</td>
<td>36.8%</td>
<td>7</td>
<td>5.3%</td>
<td>1</td>
</tr>
</tbody>
</table>

Part Three: Teaching Needs and Preferences

Responses rated from scale 4 to 6 to the questionnaire items revealed that teachers asserted that the most effective instructional strategies were hands-on practice to aid the application of knowledge (100%, N=20) followed by feedback to students (95%, N=19), lecturing for theories (95%, N=19), using worksheets (94.7%, N=18), using animated learning materials (85%, N=17) and instant feedback tools (e.g. clicker) (85%, N=17). Responses also showed that most teachers (80%, N=16)
regarded peer teaching and learning between students as an effective teaching strategy while the least preferred was using video demonstration (68.4%, N=13). When asking the difficulties teachers encountered during their teaching, a majority of the teachers rated that limited time for feedback to individual students (90%, N=18) as well as limited class time and restricted space (85%, N=17) were the highest. Over half of the teachers expressed that they needed more time to repeat explanation to students (60%, N=12) and enrich the teaching aids (e.g. videos, exercises, examples (57.9%, N=11). Lastly, half of the teachers said that they found it difficult to monitor their students’ learning progress (50%, N=10). A majority of the teachers searched information online to enhance their teaching (90%, N=18) or read text-based references (e.g. journal articles, books) (85%, N=17) followed by seeking advice from colleagues (85%, N=17), attended training sessions (e.g. workshops, seminars) (89.5%, N=17) and watched training videos (e.g. TED Talks, YouTube on education) (68.4%, N=13). Most of the teachers believed that their current teaching was effective and there was no need for improvement (75%, N=15). When asking if it was easy to find resources and advice on teaching, a majority of the teachers (80%, N=16) responded that online resources were readily available and convenient to use. They also said that the TLPs were also readily available (80%, N=16) as well as the resources and references in the library (85%, N=17). Last but not least, their colleagues were resourceful (85%, N=17). A summary of the above is shown in Table 6.

Table 6: Responses in Part Three: Teaching Needs and Preferences

<table>
<thead>
<tr>
<th>No.</th>
<th>Items</th>
<th>% of 6 Strongly agree/Always</th>
<th>% of 5</th>
<th>% of 4</th>
<th>% of 3</th>
<th>% of 2</th>
<th>% of 1 Strongly disagree/Neve</th>
<th>Form received</th>
<th>Valid Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.1</td>
<td>What is the effectiveness of the following instructional strategies?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a</td>
<td>Lecturing is effective in teaching theories.</td>
<td>20.0%</td>
<td>4</td>
<td>40.0%</td>
<td>8</td>
<td>35.0%</td>
<td>7</td>
<td>5.0%</td>
<td>1</td>
</tr>
<tr>
<td>b</td>
<td>Video demonstration enhances my explanation.</td>
<td>21.1%</td>
<td>4</td>
<td>5.3%</td>
<td>1</td>
<td>42.1%</td>
<td>1.0%</td>
<td>0.0%</td>
<td>0</td>
</tr>
<tr>
<td>c</td>
<td>Animated learning material attracts student attention.</td>
<td>15.0%</td>
<td>3</td>
<td>40.0%</td>
<td>8</td>
<td>30.0%</td>
<td>6</td>
<td>15.0%</td>
<td>3</td>
</tr>
<tr>
<td>d</td>
<td>Instant feedback tools (e.g. clickers) help engage students in their learning.</td>
<td>15.0%</td>
<td>3</td>
<td>35.0%</td>
<td>7</td>
<td>35.0%</td>
<td>7</td>
<td>15.0%</td>
<td>3</td>
</tr>
<tr>
<td>e</td>
<td>Worksheets are effective as in-class activities.</td>
<td>21.1%</td>
<td>4</td>
<td>31.6%</td>
<td>6</td>
<td>42.1%</td>
<td>8</td>
<td>5.3%</td>
<td>1</td>
</tr>
<tr>
<td>f</td>
<td>I think the majority of students' learning time should be used on teaching content knowledge in the classroom.</td>
<td>5.0%</td>
<td>1</td>
<td>30.0%</td>
<td>6</td>
<td>55.0%</td>
<td>11</td>
<td>10.0%</td>
<td>2</td>
</tr>
<tr>
<td>g</td>
<td>At present, hands-on practice aids the application of the knowledge learned.</td>
<td>20.0%</td>
<td>4</td>
<td>45.0%</td>
<td>9</td>
<td>35.0%</td>
<td>7</td>
<td>0.0%</td>
<td>0</td>
</tr>
<tr>
<td>h</td>
<td>Sufficient attention is given to individual students.</td>
<td>15.0%</td>
<td>3</td>
<td>40.0%</td>
<td>8</td>
<td>40.0%</td>
<td>8</td>
<td>5.0%</td>
<td>1</td>
</tr>
<tr>
<td>i</td>
<td>I am usually available to give feedback to students after class.</td>
<td>20.0%</td>
<td>4</td>
<td>45.0%</td>
<td>9</td>
<td>30.0%</td>
<td>6</td>
<td>5.0%</td>
<td>1</td>
</tr>
<tr>
<td>j</td>
<td>Direct instruction or lecture is good for student learning.</td>
<td>20.0%</td>
<td>4</td>
<td>25.0%</td>
<td>5</td>
<td>55.0%</td>
<td>11</td>
<td>0.0%</td>
<td>0</td>
</tr>
<tr>
<td>k</td>
<td>Students retain learning better when they can find the answers to questions on their own.</td>
<td>10.0%</td>
<td>2</td>
<td>50.0%</td>
<td>10</td>
<td>30.0%</td>
<td>6</td>
<td>10.0%</td>
<td>2</td>
</tr>
<tr>
<td>l</td>
<td>Peer teaching/learning is a useful learning method.</td>
<td>15.0%</td>
<td>3</td>
<td>45.0%</td>
<td>9</td>
<td>20.0%</td>
<td>4</td>
<td>20.0%</td>
<td>4</td>
</tr>
</tbody>
</table>

<p>| 3.2 | What are the difficulties you have encountered during your teaching? |                               |        |        |        |        |                               |               |               |
| a   | Class time is not enough.                                           | 5.0%                          | 1      | 25.0%  | 5      | 30.0%  | 6                              | 35.0%         | 7             | 0.0%          | 0             | 5.0%          | 1             | 20            | 20            |</p>
<table>
<thead>
<tr>
<th>No.</th>
<th>Items</th>
<th>% of 6 Strongly agree/Always</th>
<th>% of 5</th>
<th>% of 4</th>
<th>% of 3</th>
<th>% of 2</th>
<th>% of 1 Strongly disagree/Never</th>
<th>Form received</th>
<th>Valid Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>b</td>
<td>Teaching has been much restricted by the limited time and space of the class time.</td>
<td>15.0%</td>
<td>30.0%</td>
<td>40.0%</td>
<td>10.0%</td>
<td>0.0%</td>
<td>0.0%</td>
<td>5.0%</td>
<td>1</td>
</tr>
<tr>
<td>c</td>
<td>I have only limited time to give adequate attention to individual students.</td>
<td>20.0%</td>
<td>35.0%</td>
<td>35.0%</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0.0%</td>
<td>10.0%</td>
<td>2</td>
</tr>
<tr>
<td>d</td>
<td>Students require repetitive explanation which I am not able to provide them adequately.</td>
<td>15.0%</td>
<td>15.0%</td>
<td>30.0%</td>
<td>25.0%</td>
<td>5.0%</td>
<td>1</td>
<td>10.0%</td>
<td>2</td>
</tr>
<tr>
<td>e</td>
<td>Not enough teaching aids. (e.g. videos, exercises, examples)</td>
<td>5.3%</td>
<td>15.8%</td>
<td>36.8%</td>
<td>31.6%</td>
<td>6.3%</td>
<td>1</td>
<td>5.3%</td>
<td>1</td>
</tr>
<tr>
<td>f</td>
<td>At present, hands-on practice is not sufficient.</td>
<td>0.0%</td>
<td>15.0%</td>
<td>40.0%</td>
<td>35.0%</td>
<td>0.0%</td>
<td>0.0%</td>
<td>10.0%</td>
<td>2</td>
</tr>
<tr>
<td>g</td>
<td>I find it difficult to monitor student learning progress.</td>
<td>0.0%</td>
<td>15.0%</td>
<td>35.0%</td>
<td>35.0%</td>
<td>0.0%</td>
<td>0.0%</td>
<td>10.0%</td>
<td>2</td>
</tr>
<tr>
<td>3.3</td>
<td>How do you enhance your teaching?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a</td>
<td>I ask my colleagues for advice.</td>
<td>20.0%</td>
<td>20.0%</td>
<td>45.0%</td>
<td>15.0%</td>
<td>3.0%</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0</td>
</tr>
<tr>
<td>b</td>
<td>I read text-based references. (e.g. Journal articles, books)</td>
<td>35.0%</td>
<td>25.0%</td>
<td>25.0%</td>
<td>15.0%</td>
<td>3.0%</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0</td>
</tr>
<tr>
<td>c</td>
<td>I watch training videos. (e.g. TED Talks, YouTube on education)</td>
<td>15.8%</td>
<td>26.3%</td>
<td>26.3%</td>
<td>26.3%</td>
<td>5.3%</td>
<td>1</td>
<td>0.0%</td>
<td>0</td>
</tr>
<tr>
<td>d</td>
<td>I attend training sessions. (e.g. workshops, seminars)</td>
<td>21.1%</td>
<td>47.4%</td>
<td>21.1%</td>
<td>5.3%</td>
<td>1</td>
<td>5.3%</td>
<td>1</td>
<td>0.0%</td>
</tr>
<tr>
<td>e</td>
<td>I find information online.</td>
<td>30.0%</td>
<td>65.0%</td>
<td>25.0%</td>
<td>5.0%</td>
<td>1</td>
<td>5.0%</td>
<td>1</td>
<td>0.0%</td>
</tr>
<tr>
<td>f</td>
<td>I attend Massive Open Online Courses (MOOC).</td>
<td>0.0%</td>
<td>5.3%</td>
<td>36.8%</td>
<td>31.6%</td>
<td>6</td>
<td>21.1%</td>
<td>4</td>
<td>5.3%</td>
</tr>
<tr>
<td>g</td>
<td>I believe my current teaching is effective already. There is no need for improvement.</td>
<td>5.0%</td>
<td>15.0%</td>
<td>55.0%</td>
<td>15.0%</td>
<td>3</td>
<td>5.0%</td>
<td>1</td>
<td>5.0%</td>
</tr>
<tr>
<td>3.4</td>
<td>Is it easy to find resources and advice on teaching?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a</td>
<td>Teaching resources and references are plentiful in the library.</td>
<td>0.0%</td>
<td>20.0%</td>
<td>65.0%</td>
<td>15.0%</td>
<td>3.0%</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0</td>
</tr>
<tr>
<td>b</td>
<td>My colleagues are resourceful.</td>
<td>10.0%</td>
<td>20.0%</td>
<td>55.0%</td>
<td>15.0%</td>
<td>3.0%</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0</td>
</tr>
<tr>
<td>c</td>
<td>Teaching and Learning Packages (TLPs) are readily available.</td>
<td>5.0%</td>
<td>25.0%</td>
<td>50.0%</td>
<td>15.0%</td>
<td>3</td>
<td>5.0%</td>
<td>1</td>
<td>0.0%</td>
</tr>
<tr>
<td>d</td>
<td>Online resources are readily available and convenient to use.</td>
<td>10.0%</td>
<td>30.0%</td>
<td>40.0%</td>
<td>20.0%</td>
<td>4</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0</td>
</tr>
</tbody>
</table>

**Part Four: Teaching Support**

Responses rated from scale 4 to 6 to the questionnaire items suggested that teachers would like to have supports on multiple learning channels for students to self-regulate their learning (94.7%, N=18), to establish a sharing platform for discussion and experience sharing (89.5%, N=17), guidebooks on how to work with workplace mentors (89.5%, N=17), the enhancement of TLPs (79.5%, N=15), a sharing platform for materials sharing between different vocational institutions (84.2%, N=16) while the least support expected was multi-site broadcasting of lectures and tutorials (47.9%, N=9). A majority of the teachers would like to have more online learning activities (78.9%, N=15) while most teachers (78.9%, N=15) used the Learning Management Platform (LMP) provided by their institutes (e.g. Moodle, WebCT, Blackboard). Over half of them asserted that the LMPs were suitable for VET (57.9%, N=11) and they used other functions provided in the LMP besides uploading and downloading documents (52.6%, N=10). In priority, they wished to have reading references (84.2%, N=16), online assessment (84.2%, N=16) and exercise (73.7%, N=14), questionnaire survey (73.7%, N=14), social media chat (68.4%, N=13), learning games (68.4%,
N=13), demonstration video (57.9%, N=11), lecture videos (57.9%, N=11) and video conferencing (52.6%, N=10) in the learning platform. In addition, increasing needs are on AR (68.4%, N=13) and VR (63.2%, N=12). Over half of the teachers would like to have more mobile learning activities for teaching (76.5%, N=13) since half of them found flexibility and convenience of using mobile devices in teaching (e.g. smartphone and tablet pc) (64.7%, N=11). After all, most of the teachers (73.7%, N=14) asserted that e-learning / technology activities had been useful to their teaching. A summary of the above is shown in Table 7. Other qualitative feedback included e-learning / technology activities could draw students' attention, provide all time access, feedback timely, and enable instant interaction and online assessment. Mobile technology and application provided platform for teachers and students to make use of the most updated information from the internet and it was convenient for retrieving, uploading and amending materials.

Table 7: Responses in Part Four: Teaching Support

<table>
<thead>
<tr>
<th>No.</th>
<th>Items</th>
<th>% of 6</th>
<th>% of 5</th>
<th>% of 4</th>
<th>% of 3</th>
<th>% of 2</th>
<th>% of 1</th>
<th>Form received</th>
<th>Valid Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.1</td>
<td>I would like to have the following teaching support.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a</td>
<td>Longer class time</td>
<td>5.3%</td>
<td>1</td>
<td>5.3%</td>
<td>1</td>
<td>57.9%</td>
<td>11</td>
<td>21.1%</td>
<td>10.5%</td>
</tr>
<tr>
<td>b</td>
<td>Multi-site live broadcasting of my lecture/tutorial</td>
<td>0.0%</td>
<td>0</td>
<td>26.3%</td>
<td>5</td>
<td>21.1%</td>
<td>4</td>
<td>26.3%</td>
<td>5</td>
</tr>
<tr>
<td>c</td>
<td>Multiple learning channels for students' self-regulated learning</td>
<td>5.3%</td>
<td>1</td>
<td>31.6%</td>
<td>6</td>
<td>57.9%</td>
<td>11</td>
<td>5.3%</td>
<td>0.0%</td>
</tr>
<tr>
<td>d</td>
<td>A dedicated online platform for teaching material sharing between different vocationally oriented institutes</td>
<td>10.5%</td>
<td>2</td>
<td>21.1%</td>
<td>4</td>
<td>52.6%</td>
<td>10</td>
<td>10.5%</td>
<td>2</td>
</tr>
<tr>
<td>e</td>
<td>A sharing platform for discussion and experience sharing</td>
<td>15.8%</td>
<td>3</td>
<td>21.1%</td>
<td>4</td>
<td>52.6%</td>
<td>10</td>
<td>5.3%</td>
<td>0.0%</td>
</tr>
<tr>
<td>f</td>
<td>Enhanced Teaching and Learning Packages (TLPs) with teaching guides and suggestions</td>
<td>10.5%</td>
<td>2</td>
<td>31.6%</td>
<td>6</td>
<td>36.8%</td>
<td>7</td>
<td>21.1%</td>
<td>4</td>
</tr>
<tr>
<td>g</td>
<td>Suggested interactive activities (e.g. games)</td>
<td>10.5%</td>
<td>2</td>
<td>21.1%</td>
<td>4</td>
<td>47.4%</td>
<td>9</td>
<td>15.8%</td>
<td>3</td>
</tr>
<tr>
<td>h</td>
<td>Practice assessments and exercises (e.g. questions bank)</td>
<td>5.3%</td>
<td>1</td>
<td>26.3%</td>
<td>5</td>
<td>47.4%</td>
<td>9</td>
<td>15.8%</td>
<td>3</td>
</tr>
<tr>
<td>i</td>
<td>Guidebooks on how to work with workplace mentors.</td>
<td>0.0%</td>
<td>0</td>
<td>31.6%</td>
<td>6</td>
<td>57.9%</td>
<td>11</td>
<td>10.5%</td>
<td>2</td>
</tr>
</tbody>
</table>

4.2 Do e-learning/technology activities help with your teaching?

<table>
<thead>
<tr>
<th>No.</th>
<th>Items</th>
<th>% of 6</th>
<th>% of 5</th>
<th>% of 4</th>
<th>% of 3</th>
<th>% of 2</th>
<th>% of 1</th>
<th>Form received</th>
<th>Valid Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>a</td>
<td>I always use the Learning Management Platform (LMP) provided by my institute. (e.g. Moodle, WebCT, Blackboard)</td>
<td>5.3%</td>
<td>1</td>
<td>21.1%</td>
<td>4</td>
<td>52.6%</td>
<td>10</td>
<td>15.8%</td>
<td>3</td>
</tr>
<tr>
<td>b</td>
<td>In addition to uploading and downloading documents, I also use other functions provided in the LMP.</td>
<td>0.0%</td>
<td>0</td>
<td>15.8%</td>
<td>3</td>
<td>36.8%</td>
<td>7</td>
<td>31.6%</td>
<td>6</td>
</tr>
<tr>
<td>c</td>
<td>The LMP I am using is suitable for vocational education and training.</td>
<td>0.0%</td>
<td>0</td>
<td>26.3%</td>
<td>5</td>
<td>31.6%</td>
<td>6</td>
<td>36.8%</td>
<td>7</td>
</tr>
<tr>
<td>d</td>
<td>I wish to have more online learning activities for my subject.</td>
<td>10.5%</td>
<td>2</td>
<td>42.1%</td>
<td>8</td>
<td>26.3%</td>
<td>5</td>
<td>15.8%</td>
<td>3</td>
</tr>
<tr>
<td>e</td>
<td>I wish the online learning platform can have the following learning and teaching activities:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>e_i</td>
<td>reading references</td>
<td>10.5%</td>
<td>2</td>
<td>52.6%</td>
<td>10</td>
<td>21.1%</td>
<td>4</td>
<td>10.5%</td>
<td>2</td>
</tr>
<tr>
<td>e_ii</td>
<td>lecture videos</td>
<td>10.5%</td>
<td>2</td>
<td>21.1%</td>
<td>4</td>
<td>26.3%</td>
<td>5</td>
<td>15.8%</td>
<td>3</td>
</tr>
<tr>
<td>e_iii</td>
<td>video conferencing</td>
<td>5.3%</td>
<td>1</td>
<td>31.6%</td>
<td>6</td>
<td>15.8%</td>
<td>3</td>
<td>21.1%</td>
<td>4</td>
</tr>
<tr>
<td>No.</td>
<td>Items</td>
<td>% of 6</td>
<td>% of 5</td>
<td>% of 4</td>
<td>% of 3</td>
<td>% of 2</td>
<td>% of 1</td>
<td>Form received</td>
<td>Valid Response</td>
</tr>
<tr>
<td>-----</td>
<td>-------</td>
<td>--------</td>
<td>--------</td>
<td>--------</td>
<td>--------</td>
<td>--------</td>
<td>--------</td>
<td>--------------</td>
<td>----------------</td>
</tr>
<tr>
<td>e_iv</td>
<td>demonstration videos</td>
<td>15.8%</td>
<td>3</td>
<td>21.1%</td>
<td>4</td>
<td>21.1%</td>
<td>4</td>
<td>21.1%</td>
<td>4</td>
</tr>
<tr>
<td>e_v</td>
<td>learning games</td>
<td>10.5%</td>
<td>2</td>
<td>21.1%</td>
<td>4</td>
<td>36.8%</td>
<td>7</td>
<td>21.1%</td>
<td>4</td>
</tr>
<tr>
<td>e_vi</td>
<td>online exercise</td>
<td>10.5%</td>
<td>2</td>
<td>31.6%</td>
<td>6</td>
<td>31.6%</td>
<td>6</td>
<td>21.1%</td>
<td>4</td>
</tr>
<tr>
<td>e_vii</td>
<td>online assessment</td>
<td>10.5%</td>
<td>2</td>
<td>26.3%</td>
<td>5</td>
<td>47.4%</td>
<td>9</td>
<td>3.5%</td>
<td>1</td>
</tr>
<tr>
<td>e_viii</td>
<td>social media chat</td>
<td>5.3%</td>
<td>1</td>
<td>26.3%</td>
<td>5</td>
<td>36.8%</td>
<td>7</td>
<td>26.3%</td>
<td>5</td>
</tr>
<tr>
<td>e_ix</td>
<td>questionnaire survey</td>
<td>15.8%</td>
<td>3</td>
<td>21.1%</td>
<td>4</td>
<td>36.8%</td>
<td>7</td>
<td>10.5%</td>
<td>2</td>
</tr>
<tr>
<td>f</td>
<td>I think e-learning/technology activities have been useful to my teaching.</td>
<td>5.3%</td>
<td>1</td>
<td>31.6%</td>
<td>6</td>
<td>36.8%</td>
<td>7</td>
<td>21.1%</td>
<td>4</td>
</tr>
<tr>
<td>h</td>
<td>I find flexibility and convenience of using mobile devices in my teaching. (e.g. smartphone and tablet pc)</td>
<td>0.0%</td>
<td>0</td>
<td>29.4%</td>
<td>5</td>
<td>35.3%</td>
<td>6</td>
<td>23.5%</td>
<td>4</td>
</tr>
<tr>
<td>i</td>
<td>I wish to have more mobile learning activities for teaching.</td>
<td>0.0%</td>
<td>0</td>
<td>29.4%</td>
<td>5</td>
<td>47.1%</td>
<td>8</td>
<td>11.8%</td>
<td>2</td>
</tr>
<tr>
<td>j</td>
<td>I wish to have the following mobile learning activities:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>j_i</td>
<td>reading references</td>
<td>5.3%</td>
<td>1</td>
<td>52.6%</td>
<td>10</td>
<td>26.3%</td>
<td>5</td>
<td>10.5%</td>
<td>2</td>
</tr>
<tr>
<td>j_ii</td>
<td>lecture videos</td>
<td>5.6%</td>
<td>1</td>
<td>22.2%</td>
<td>4</td>
<td>38.9%</td>
<td>7</td>
<td>11.1%</td>
<td>2</td>
</tr>
<tr>
<td>j_iii</td>
<td>video conferencing</td>
<td>0.0%</td>
<td>0</td>
<td>26.3%</td>
<td>5</td>
<td>31.6%</td>
<td>6</td>
<td>15.8%</td>
<td>3</td>
</tr>
<tr>
<td>j_iv</td>
<td>demonstration videos</td>
<td>5.6%</td>
<td>1</td>
<td>22.2%</td>
<td>4</td>
<td>33.3%</td>
<td>6</td>
<td>16.7%</td>
<td>3</td>
</tr>
<tr>
<td>j_v</td>
<td>augmented reality (AR)</td>
<td>0.0%</td>
<td>0</td>
<td>31.6%</td>
<td>6</td>
<td>36.8%</td>
<td>7</td>
<td>10.5%</td>
<td>2</td>
</tr>
<tr>
<td>j_vi</td>
<td>virtual reality (VR)</td>
<td>0.0%</td>
<td>0</td>
<td>26.3%</td>
<td>5</td>
<td>36.8%</td>
<td>7</td>
<td>10.5%</td>
<td>2</td>
</tr>
<tr>
<td>j_vii</td>
<td>learning games</td>
<td>5.3%</td>
<td>1</td>
<td>26.3%</td>
<td>5</td>
<td>31.6%</td>
<td>6</td>
<td>21.1%</td>
<td>4</td>
</tr>
<tr>
<td>j_viii</td>
<td>online exercise</td>
<td>5.3%</td>
<td>1</td>
<td>26.3%</td>
<td>5</td>
<td>52.6%</td>
<td>10</td>
<td>0.0%</td>
<td>0</td>
</tr>
<tr>
<td>j_ix</td>
<td>online assessment</td>
<td>5.3%</td>
<td>1</td>
<td>31.6%</td>
<td>6</td>
<td>36.8%</td>
<td>7</td>
<td>10.5%</td>
<td>2</td>
</tr>
<tr>
<td>j_x</td>
<td>social media chat</td>
<td>5.3%</td>
<td>1</td>
<td>21.1%</td>
<td>4</td>
<td>42.1%</td>
<td>8</td>
<td>21.1%</td>
<td>4</td>
</tr>
<tr>
<td>j_xi</td>
<td>questionnaire survey</td>
<td>10.5%</td>
<td>2</td>
<td>36.8%</td>
<td>7</td>
<td>31.6%</td>
<td>6</td>
<td>10.5%</td>
<td>2</td>
</tr>
<tr>
<td>k</td>
<td>I think mobile learning/technology is helpful to my teaching.</td>
<td>5.3%</td>
<td>1</td>
<td>31.6%</td>
<td>6</td>
<td>36.8%</td>
<td>7</td>
<td>15.8%</td>
<td>3</td>
</tr>
</tbody>
</table>

**Summary of the Findings from the Questionnaire Survey for Teachers**

- Lectures were the most frequent teaching and learning activities followed by demonstrations, hands-on practices while the least conducted one was e-learning / technology activities amongst all teachers.
- A majority of the teachers searched online for teaching references to enhance their teaching online resources because they were readily available and convenient.
- A majority of the teachers preferred not to capture or record their lectures, and let their students view them afterwards.
- Teachers asserted that the most effective instructional strategies were hands-on practice to aid the application of knowledge, followed by feedback to students, lecturing for theories, using worksheets, using animated learning materials and instant feedback tools (e.g. clicker).
- Teachers expressed that they needed more time to repeat explanation to students.
- Guidebooks on how to work with workplace mentors and the enhancement of TLPs were also expected.
- Teachers would like to have supports on multiple learning channels for students to self-regulate their learning. An online platform was suggested to establish for discussion,
experience and materials sharing between different vocational institutions.

- A majority of the teachers would like to have more online learning activities and considered that e-learning / technology activities were useful to their teaching.
- In priority, teachers wished to have reading references, online assessment and exercise, questionnaire survey, social media chat, learning games, demonstration video, lecture videos and video conferencing in the learning platform.
- Increasing needs are on AR and VR to facilitate teaching.
- The least preferred teaching support was multi-site broadcasting of lectures and tutorials.
- Over half of the teachers would like to have more mobile learning activities for teaching and they found flexibility and convenience of using mobile devices in teaching.

Phase Two

In Phase Two, eight semi-structured focus group interviews with 60 students from four VET institutions, one focus group with 20 teachers from one of the participating institutions, eight individual interviews with teachers from three of the participating institutions, and ten individual interviews with workplace mentors from four different industry sectors were conducted to diagnose the learning and teaching needs of students, teachers, and workplace mentors (respective interview questions are attached in Appendices III, IV and V). In addition, five class visits were conducted to observe the current teaching practices (the class observation form is attached in Appendix VI). All of the above aims to identify specific instructional strategies to derive innovative pedagogical practices. Thirteen sets of curricular and instructional materials from the participating institutions were also collected for comparison and analysis to generate innovative instructional strategies (e.g. differentiated instruction, TEL, work-integrated learning and assessment) for the enhancement of TLPs.

Semi-structured Focus Group Interviews with 60 Students

The focus groups comprised 60 students studying in Hotel, Hospitality, Tourism, Pharmaceutical Science, Nursery Education, Property Management and Design programmes. When asking their learning practices, most of the students responded that they liked to study alone at home rather than in school. Nonetheless, they would like to study in groups with peers for idea exchange and information sharing. It indicated that students would like to study at their preferred places and not like to be bounded by locations, while being connected and interacted with friends and peers were important. In general, most of the students used personal computers or mobile phones for online information searching and communication with peers. Most of them regarded lecture notes as one of their most preferred learning tools because they could jot down important points during the lectures. A majority of the students liked visual images, videos, demonstrations, group discussions, interactive activities and tutorials in their lessons. On the contrary, students disliked long lectures without interactions, rigid teachers, fast teaching pace, unclear explanations and heavily loaded timetables. Their most frequently encountered difficulties in class were teachers’ fast teaching pace, English vocabulary and jargons, classes involving theories, not being able to see and remember demonstrations as well as the understanding of lecture notes. They would seek help
from peers face-to-face or via social media, go online for subject information, dictionaries and demonstration videos. They used computers and mobile phones to access Google, Wikipedia and other online resources to solve learning problems. Some of the students also considered that online information may not be accurate and they would use them as supplementary materials. Students generally liked teachers to prepare notes, share real-life experiences, demonstrate procedures in moderate pace and reinforce lessons with videos after classes.

Concerning students’ views on learning with technology, a majority of them believed that technology could enhance their learning. They would like to have videos, lecture capture system for timely review of lessons, augmented reality (AR) for simulation practices, online platform for materials sharing and retrieval, mobile apps, massive open online course (MOOC) for flexible learning and social media for communication with peers. For accessibility, most of the students preferred using personal computers, mobile phones, tablets for online information but they also preferred printed copies for note taking and study.

*Focus Group with 20 Teachers*

The focus group comprised 20 teachers teaching Engineering, Design, Information Technology, Building Services, Language, Whole Personal Development, Culinary Arts and Automotive Technology programmes. Nine of them had received teacher trainings and held in-house training certificates, Postgraduate Diploma in Education or Bachelor of Education. Reflected from responses to the questions of teaching practices and the problems, almost all the teachers stressed on classroom management problems, e.g. students were not attentive, unmotivated as well as passive. Teachers mentioned that they would use a range of student-centred approaches to conduct different learning and teaching activities, such as real-life examples, learning games, group discussions, questionings and different assessments to draw students’ attention. In addressing the issues of resources and supports for teachers to teach their modules, half of them said the resources were enough and sufficient while the other half mentioned that there was room to enhance the TLPs, online supplementary materials and subjects related information. Half of the teachers would also like to have training on special educational needs (SEN), pedagogical practices, presentation skills, instructional design, classroom management and technology enhanced learning. When asking if they made use of the Learning Management Platform (LMP) provided by their institutes, 15 teachers said they had been using the LMP. In addition to the Moodle platform, the mostly used technologies in their teaching were videos, PowerPoints and YouTube. They preferred using computers and mobile phones to access internet and online resources. Some of the teachers responded that they did not have time to prepare for the use of technology in teaching. Other teachers also commented that technology was unnecessary because of the specific nature of their courses. Some also said that they did not know which technology was available to be used. When asking the pros and cons of using technology in teaching, most of them believed that technology would motivate students to learn more effectively, as it enabled easy information sharing and material updates, broadened students’ visions with abundant resources, provided flexible learning, catered for diverse learning styles, offered better interactions and communication.
outside school and created multi-sensory attractions. Nevertheless, a few teachers worried about the copyright issues, and their views on using technology in teaching to enhance students’ learning effectiveness were still in question.

In response to the questions on teaching with technology, teachers generally agreed that during students’ IAs, TEL such as interactive course contents, lecture capture system, videos, online learning and teaching resources, assessments and discussion forums would help. Half of the teachers considered that social media, AR, VR, video capture system and massive open online course (MOOC) would enable teaching effectiveness, while a majority of the teachers asserted that mobile apps would not improve teaching effectiveness. Similar to the views of students, when asking teachers’ most preferable learning aids and technology, almost all the teachers chose printed copies as the first choice followed by personal computers and mobile phones. Teachers also suggested including the provision of related hardware (computers in every classroom, cameras, video capture system, projectors) and software (online platform, learning and teaching resources, mobile apps) by the institutions to facilitate the use of technology and online resources in daily teaching.

*Individual Interviews with Eight Teachers*

The eight teachers participated in the individual interviews were from Building Services, Engineering, Culinary Arts, Hospitality and Pharmaceutical disciplines of three different institutions. Seven of them had received learning and teaching training. In response to the problems and issues in teaching practices, most teachers commented that the students were not attentive, unmotivated, and lack of work experience. These teachers also mentioned that the English standard of some students was poor and the student-teacher ratio was high. Because of the above, they adopted different means to motivate the students to learn more effectively, including questioning, group discussions, peer collaborations, role plays, case studies, demonstrations, visuals, videos, real-life examples, guest speakers and visits. All teachers agreed that the teaching resources provided by their institutions were sufficient but there was room for further enhancement (e.g. TLPs, online references). For training, teachers preferred multimedia production, hardware and software, and pedagogy. Except one Engineering teacher, all teachers used Moodle provided by institutions, but most of them only used the platform to upload and download notes and teaching materials, and collect assignments. One of the teachers said that the Moodle platform was too slow and students did not like to log in to it. They preferred using other online resources or apps for communication. The most commonly used technologies by the teachers were video clips, online resources, internet, YouTube, Facebook, WhatsApp and other mobile apps. Teachers generally agreed that technology for learning would benefit students and enhance learning effectiveness because online resources provided not just subject materials, but also other related resources, as well as learning flexibility. They also agreed that using technology saved time on updating teaching materials, lessened administrative work, was good for data collection and thus released teachers’ workloads. And they continued to express that technology for learning was good for timely review and communication especially when the students were in IAs. A few teachers were concerned about
the workload of students once imposed technology in learning. When asking what and how technologies could be used effectively to help out teaching, teachers replied that AR/VR would promote interactivities; video capture system could be for lecture reviews; social media could foster connections with students; and MOOC enhanced flexible learning. But one teacher said video capture system may indirectly encourage students to skip classes and teachers and students might not want to be caught on camera. Answers to the question about teachers’ most preferred teaching aids revealed that printed copies, personal computers and mobile phones were most commonly used. On the suggestions of using technology and online resources, most of the teachers recommended online platforms and materials, videos, AR/VR and games. The also expressed that a good promotion on the use of technology in teaching was important to prepare teachers and students as potential users.

**Individual Interviews with Ten Workplace Mentors**

The ten workplace mentors participated in the individual interviews were from medical, retail, hospitality and entertainment industries. Only two of the workplace mentors did not have formal learning and teaching training. The workplace mentors’ work experiences ranged from 1 to 20 years and their roles were clinical supervisor, mentors, demonstrators, tutors, trainer and learning and development director. Responses to the questions on workplace mentoring practices showed that the most common problems the workplace mentors encountered in teaching trade-specific skills and workplace etiquette were the shortage of time for coaching, the readiness, the diverse backgrounds and proficiencies, and the lack of work experiences of the students. Most of the workplace mentors used guidance, coaching, observations, case studies, real-life examples, experience sharing, learning and teaching activities, self-evaluation, target setting and feedback as teaching methods to help students learn more effectively. Videos, case reviews, self-assessments and reflections, hands-on practices, demonstration of procedures and real-life projects were also used to facilitate students’ learning in the workplaces. Most of the workplace mentors had designed or used online resources, guidelines and notes, assessment and feedback forms and reflective logs. Over half of them agreed that the current resources were sufficient but they would like to have train-the-trainer, coaching skills and mentoring skills courses. Regarding the questions on using technology in mentoring, the workplace mentors in the hospital said they had been using e-learning materials for learning, assessments and evaluations. The workplace mentors in the retail sector did not use any technology in mentoring because of the job nature, while mentor in entertainment industry used internet to retrieve online resources for students for reference in mentoring. The workplace mentors in general asserted that technology was convenient for timely update of teaching materials, provided flexible learning without being bounded by locations, fostered communications via social media and was attractive to young generations. However, they commented that the drawbacks concerned the resources input for development, the unsuitability for hands-on practices and the lack of personal care. Half of the workplace mentors believed that technology would benefit students and enhance the effectiveness of mentorship. When asking the questions on teaching with technology and students’ supports in IAs, the workplace mentors expressed that interactive course, video capture, online viewing of lectures, instant messages for
communications, online assessment and feedback sharing platforms between school instructors, workplace mentors and students were most needed. The workplace mentors in general contended that social media provided better communication and sharing of information; AR/VR served as a supplement to students’ hands-on practices which enhanced their learning; video capture system allowed timely and clear review of lectures and demonstrations; MOOC enabled flexible and self-paced learning; and mobile apps were for convenience. The workplace mentors also agreed that the above when used appropriately would enhance mentoring effectiveness. When asking workplace mentors’ most preferable learning aids and technology, they mostly chose printed copies as the first choice followed by personal computers and mobile phones. On the suggestions for the use of technology and online resources, most of the workplace mentors suggested that online platforms with learning and teaching materials were most needed.

*Five Class Visits*

Five class visits were conducted in one of the participating institutions to observe the current teaching practices. During the five class visits with 60-minute each, it was observed that the most used media in teaching was PowerPoint followed by video viewing and occasionally online activities. Lecturing was one of the most used teacher-centred learning and teaching activities and there were nearly no small group interactions and discussions. After all, there were no innovative pedagogical practices, such as technology enhanced learning, AR, VR and the use of online learning platform and social media to promote interactive activities and motivate students to enhance learning experiences and effectiveness.

*Comparison and Analysis of Thirteen Sets of Curricular and Instructional Materials*

Thirteen sets of TLPs were reviewed. In terms of structure, each TLP consisted of intended learning outcomes, scheme of work, assessment scheme, references, a series of PowerPoint slides, etc. The lectures contained PowerPoint slides, activities, exercises, questions and end with a summary that listed the main points covered. The PowerPoint slides included texts, examples, photos and figures to illustrate points.

*Summary of the Findings from Interviews*

**Students**

- Students preferred flexible learning while at the same time maintaining peers communication.
- Students used personal computers or mobile phones for online information searching and communication with peers.
- Lecture notes were students’ preferred learning tool.
- Visual images, videos, demonstrations, group discussions, interactive activities, real-life experiences sharing and tutorials were preferred in lessons.
- Long lectures without interactions, rigid teachers, fast teaching pace, unclear explanations and heavily loaded timetables were unfavourable.
• Their most frequently encountered difficulties in class were teachers’ fast teaching pace, English vocabulary and jargons, classes involving theories, not being able to see and remember demonstrations as well as the understanding of lecture notes.

• Help sought from peers face-to-face or via social media, online searching for subject information, dictionaries and demonstration videos were popular.

• Some of the students also considered that online information may not be accurate and they would use them as supplementary materials only.

• Students believed that technology could enhance their learning.

• They would like to have videos, lecture capture system for timely review of lessons, augmented reality (AR) for simulation practices, online platform for materials sharing and retrieval, mobile apps, MOOC for flexible learning and social media for communication with peers.

**Teachers**

• Teachers generally encountered classroom management problems, e.g. students are not attentive, unmotivated and passive.

• Teachers expressed that the English standard of some students was poor.

• Student-centred approaches were used to conduct different learning and teaching activities such as real-life examples, learning games, group discussions, questionings and different assessments to draw students’ attention.

• Some said the current resources were enough and sufficient while the other mentioned that there was room to enhance the TLPs, online supplementary materials and subjects related information.

• Teachers would like to have training on special educational needs (SEN), pedagogical practices, presentation skills, instructional design, classroom management and TEL.

• They preferred using computers and mobile phones to access internet and online resources.

• Promotion of TEL was needed.

• Most teachers believed that technology would motivate students to learn more effectively, as it enabled easy information sharing and material updates, broadened students’ visions with abundant resources, provided flexible learning, catered for diverse learning styles, offered better interactions and communication outside school and created multi-sensory attractions.

• Using technology saved time on updating teaching materials, lessened administrative work, was good for data collection and thus released teachers’ workloads.

• The most commonly used technology for the teachers were PowerPoints, video clips, online resources, internet, YouTube, Facebook, WhatsApp and other mobile apps.

• A few teachers worried about the copyright issue.

• Teachers agreed that during students’ IAs, technology enhanced learning, such as interactive course contents, lecture capture system, videos, online learning and teaching resources and assessments, and discussion forums would help.

• Teachers considered that social media, AR/VR, video capture system and MOOC would enable teaching effectiveness.
Workplace Mentors

- The most common problems the workplace mentors encountered in teaching trade-specific skills and workplace etiquette were the shortage of time for coaching, the readiness, the diverse backgrounds and proficiencies and the lack of work experiences of the students.
- Guidance, coaching, observations, case studies, real-life examples, experience sharing, learning and teaching activities, self-evaluation, target setting and feedback were used to help students learn more effectively.
- Videos, case reviews, self-assessments and reflections, hands-on practices, demonstration of procedures and real-life projects were also being used to facilitate students’ learning in the workplaces.
- Half of the workplace mentors agreed that the current resources were sufficient.
- They would like to have train-the-trainer, coaching skills and mentoring skills courses.
- The workplace mentors in general asserted that technology was convenient for timely update of teaching materials, provided flexible learning without being bounded by locations, fostered communications via social media and was attractive to young generations.
- Half of the workplace mentors believed that technology would benefit students and enhance the effectiveness of mentorship.
- The drawbacks concerned the resources input for development, the unsuitability for hands-on practices and the lack of personal care.
- Interactive course, video capture, online viewing of lectures, instant messages for communications, online assessment and feedback sharing platforms between school instructors, workplace mentors and students were most needed.
- Workplace mentors most preferred printed copies followed by personal computers and mobile phones as learning aids.
- Online platform with learning and teaching materials were most needed.

Summary of the Findings from Class Visits and Comparisons of Curricular and Instructional Materials

- The most used media in teaching was PowerPoint and videos.
- Lecturing was one of the most used teacher-centred learning and teaching activities.
- Group discussions were seldom conducted.
- No innovative pedagogical practices such as technology enhanced learning were used in classes.
- TLPs were well organised that consisted of intended learning outcomes, scheme of work, assessment scheme, references and a series of PowerPoint slides.
- Nearly all instructional materials were documents and text-based.
- Multimedia materials, such as text, images, sounds and videos were in short.
Phase Three
In Phase Three, data collection from other VET providers and the public is to be carried out using online questionnaires on the Project Website to collect different views and perspectives from other VET providers, students, teachers, workplace mentors and public’s needs for continuous update and improvement. In addition, workplace visits are yet to be conducted to diagnose the learning and teaching needs of students and workplace mentors. This enables longitudinal data collection for the generation of innovative instructional strategies related to workplace learning and the enhancement of the TLPs to be developed. Results of Phase Three’s study will be uploaded to the Project Website on a regular basis.

Recommendations
Making references to Phase One and Two’s findings, the following are recommended:

1. Learning Flexibility, Guidance, Collaboration and Training to Accommodate Students, Teachers and Workplace Mentors’ Learning and Teaching Needs
   - Provide students with greater flexibility, accessibility and convenience when studying.
   - Enhance peer collaborative learning activities for information sharing, discussion and mutual support.
   - Provide more hands-on practices and guidance for teachers and workplace mentors to facilitate students’ learning in schools and workplaces.
   - Provide teachers and workplace mentors with training on technology enhanced learning (TEL), pedagogical practices, presentation skills, instructional design and classroom management skills.
   - Support workplace mentors with train-the-trainer, coaching skills and mentoring skills courses.

2. Technology Enhanced Learning (TEL) as Innovative Pedagogical Practices for VET
   - Promote TEL to allow a wider acceptance between VET stakeholders.
   - Increase technology enhanced learning and teaching activities to benefit both teachers and students.
   - Develop e-learning materials and online resources (e.g. interactive course contents, glossaries, work sheets, online supplementary materials and subject related information) for ease of online study.
   - Promote flexible and self-regulated learning using MOOC, demonstration videos, online assessment and lecture videos.
   - Increase supports on AR and VR to motivate students to learn and facilitate learning and teaching.
   - Use social media and video conferencing for peer collaborative learning and better interactions and communication outside school and during IAs.
   - Develop mobile apps to facilitate online learning and teaching.
   - Enhance the schools’ e-learning platform for more user friendly experiences.
• Explore multiple learning channels for students to self-regulate their learning and to establish a sharing platform for discussion and experience, as well as a platform for materials sharing between different vocational institutions.
• Establish sharing platforms between school instructors, workplace mentors and students.
• Develop guidebooks for teachers and students on how to work with workplace mentors.
• Enhance TLPs with visuals and real-life examples (e.g. videos, animations, graphs, images, pictures, table charts, and current issues) rather than words/text.

3. Specific Instructional Strategies for VET
• Adopt guidance, coaching, observations, case studies, real-life examples, experience sharing, learning and teaching activities, self-evaluation, target setting and feedback to help students learn more effectively.
• Use videos, case reviews, self-assessments and reflections, hands-on practices, demonstrations of procedures and real-life projects to facilitate students’ learning in the workplaces.
• Employ multimedia materials, such as text, images, sound and videos to create learning materials that suit learners with different learning styles and promote a higher degree of interactivity in the learning process.
• Transform the text-based learning packages into multiple representations which can suit the level, subject content, and the needs of learners.
• Blend face-to-face teaching with e-learning or mobile learning to further enhance student motivation and interaction.

Conclusion
With an aim to reconfirm and identify suitable pedagogical practices to devise suitable e-learning means (e.g. differentiated instruction, work-integrated learning and assessment, TEL) for more effective learning and teaching in VET, this study used questionnaire surveys, focus group interviews and class visits with a range of VET stakeholders for the identification of specific instructional strategies to derive innovative pedagogical practices. Curricular and instructional materials from the participating institutions were also collected for comparison and analysis to generate innovative instructional strategies for the enhancement of TLPs, specifications and design of the online sharing platform. Findings revealed that flexibility, guidance, collaboration and training would be able to accommodate VET students, teachers and workplace mentors’ learning and teaching needs. It is also suggested that TEL would be the most appropriate innovative pedagogical practices for VET.

Furthermore, using various kinds of media and representations, such as text, graphs, tables, audio, videos, animations, and interactive dynamic visuals would enhance learning and teaching. de Jong and van der Meij (2012) pointed out that multiple representations are important for learning. There are different learning styles among students. Some students learn effectively by reading text, while others prefer audiovisual materials. Student engagement also varies according to different forms of
representations available at the course site. Therefore, multiple representations can help maximize learners’ ability to retain information and learner engagement. Overall, it is recommended to transform the text-based learning packages into multiple representations which can suit the level, subject content, and the needs of learners. Also, due to the advances in technology, one of the current trends in learning and teaching is blending face-to-face teaching with e-learning or mobile learning. It is important to make use of these new technologies to further enhance student motivation and interaction. Last but not least, coaching, feedback, cases and real-life examples, experience sharing, self-evaluation, target setting, multimedia materials, blended-learning etc. are identified as specific instructional strategies for effective learning and teaching in VET.
References


List of Tables

Table 1  Responses in Part One: Learning Practices
Table 2  Responses in Part Two: Learning Needs and Preferences
Table 3  Responses in Part Three: Learning Support
Table 4  Responses in Part One: General Information
Table 5  Responses in Part Two: Teaching Practices
Table 6  Responses in Part Three: Teaching Needs and Preferences
Table 7  Responses in Part Four: Teaching Support
Vocational Training Council (VTC), The Open University of Hong Kong (OUHK), Caritas Institute of Higher Education (CIHE) and Caritas Bianchi College of Careers (CBCC) are now collaborating on a project titled “Development of Effective Pedagogical Practices and a Cross-institutional Online Sharing Platform for Hong Kong’s Vocational Education and Training (VET)”. 

The project includes a survey on the teaching and learning environment of vocational education and training. The study aims to:

- identify the learning and teaching needs of Hong Kong VET students, teachers and workplace mentors;
- identify specific instructional strategies for VET; and
- derive innovative pedagogical practices to accommodate the educational needs of VET.

This investigation’s objectives are:

- Understanding the learning and teaching needs of Hong Kong VET students, teachers, and workplace mentors;
- Identifying specific instructional strategies for VET education; and
- Deriving innovative pedagogical practices to accommodate the educational needs of VET.

Appendix I: Questionnaire for Students
We would like to invite you to complete the following questionnaire. Your input would help us
design and develop better learning and teaching practices to achieve more effective vocational
education and training.

請填寫問卷。你的回答，對改善本地職業培訓教學將有莫大裨益。

The data are collected solely for the captioned study. Your participation is totally voluntary and you
are free to withdraw from the research at any time if inappropriateness found. You will just fill out
the questionnaire, and there is no other obligation.

所有資料皆用於本研究，參與全屬自願，所以你沒有義務一定要參與。你可隨時退出本研究。

All responses from participants will be kept strictly confidential and individual participants are not
identified in the analysis of the data. The collected data will be solely used for research purposes.
Electronic data collected will be encrypted, and all data collected (both hard paper copies and data
in electronic format) will be stored in secured drawers for a maximum of five years only at Centre
for Learning and Teaching, Vocational Training Council, 12/F VTC Tower, 27 Wood Road, Wan
Chai, Hong Kong. Thereafter, all the data will be destroyed.

所有資料皆保密及佚名。資料祗會用於本研究，文件、光碟等皆密存於香港灣仔活道二十七
號職業訓練局大樓十二樓教學中心內的檔案匣五年後銷毀。

The final report (in PDF version) of this study can be obtained from the Principal Investigator of
this study Dr Ng Yuk Kwan, Ricky via email: rickyng@vtc.edu.hk

可以電郵向首席研究員索取本研究成果的文件。

Please fill in and circle the information where appropriate for each statement. Please answer the
questions to your best knowledge and judgement.

請填寫問卷，並按你的認識作最佳判斷，圈出每個句子的答案。

Thank you for your participation.

多謝參與。

Centre for Learning and Teaching, Vocational Training Council
職業訓練局教學中心

November 2015

二零一五年十一月
Questionnaire (Student)
問卷(學生)

Part 1- Learning Practices
第一部分 – 學習實況
Please fill in and circle the information where appropriate.
請填寫資料，並在適當位置圈出答案。

1.1. How often are the following teaching and learning activities (TLA) used in the classroom?
以下的教學活動，多久會進行一次？(請按你的認識作最佳判斷)
(a) Lectures 講課
(b) Demonstrations 示範
(c) Hands-on practices 實務練習
(d) Tutorials 導修
(e) e-learning/ Use of technology activities 網上學習/使用科技進行活動

Example(s), if any:
例如：

1.2. How often do you do the following when you study your modules?
你通常怎樣學習你的科目？

(a) I do pre-reading and other preparation before class.
我上課前先做預習和準備。
(b) I do revision after class.
我下課後溫習。
(c) I study on a fixed study schedule I set for myself.
我根據自訂的時間表，在固定的時間溫習。
(d) I do not follow a fixed study schedule, but just study at a time and place I find appropriate.
我沒有固定的溫習時間表，當我遇到適當時間和地點就會溫習。

Please turn over the page 請翻後頁
### 1.3. How often do you use the following means in your study?

你常用以下哪種方式溫習？

<table>
<thead>
<tr>
<th>Never</th>
<th>Always</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 2 3 4 5 6</td>
<td>1 2 3 4 5 6</td>
</tr>
</tbody>
</table>

#### a. I study with printed materials other people have prepared (e.g. notes provided by the teacher, notes prepared by other students, textbooks recommended by the teacher)

我用他人準備的印刷資料（例如：老師提供的筆記，同學編寫的筆記，老師推薦的教科書）。

#### b. I study with printed materials I have prepared myself (e.g. class notes I took in class, notes prepared by myself)

我用自製的印刷資料（例如：我上課做的筆記，我做的溫習筆記）。

#### c. I use online resources prepared/recommended by others (e.g. online notes provided by the teacher or prepared by other students, online resources recommended by the teacher or other students)

我用他人準備的網上資源學習（例如：老師提供的網上筆記，同學編寫的網上筆記，老師推薦的網上教材）。

#### d. I use online resources prepared by myself (e.g. online notes I prepare, online resources I find)

我用自製的網上資源學習（例如：我上課做的網上筆記，我搜尋的網上資源／資料）。

#### e. I use mobile devices (e.g. smartphone, tablet pc) for learning.

我用流動工具學習。（如：智能電話、微型電腦）

#### f. I ask teachers for help when I don’t understand.

我不明白時，會問老師。

#### g. I ask peers for help when I don’t understand.

我不明白時，會問同輩。

#### h. I study alone and I try to find answers by myself.

我自己溫習。

### 1.4. What do you learn in the classroom?

課堂裏你學會什麼？

<table>
<thead>
<tr>
<th>Never</th>
<th>Always</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 2 3 4 5 6</td>
<td>1 2 3 4 5 6</td>
</tr>
</tbody>
</table>

#### a. Knowledge (e.g. theories, concepts, principles, procedures, rules)

知識（如：理論、概念、原理、步驟、規則）

#### b. Trade-specific Skills (e.g. hands-on practice, techniques, demonstration)

行業專門技能（如：實務練習、技術、示範）

#### c. Workplace Etiquette (e.g. work attitudes, work ethics, values)

工作禮儀（如：工作態度、工作倫理、價值觀）

#### d. Application of knowledge

知識的應用

#### e. Analysis of problems

分析問題
1.5. **What do you learn in industrial attachment (IA) or work placement?**

職場實習中你學會什麼？

<table>
<thead>
<tr>
<th>Knowledge (e.g. theories, concepts, principles, procedures, rules)</th>
<th>Never</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trade-specific Skills (e.g. hands-on practice, techniques, demonstration)</td>
<td>Never</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>Workplace Etiquette (e.g. work attitudes, work ethics, values)</td>
<td>Never</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>Application of knowledge</td>
<td>Never</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>Analysis of problems</td>
<td>Never</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
</tbody>
</table>

**Part 2 - Learning Needs and Preferences**

第二部分 – 學習需要及學習傾向

Please fill in and circle the information where appropriate.

請填寫資料，並在適當位置圈出答案。

2.1. **How do you like to learn?**

你喜歡怎樣學習？

<table>
<thead>
<tr>
<th>a. I like reading words/text.</th>
<th>Strongly Disagree</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>b. I like listening to lecture.</td>
<td>Strongly Disagree</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>c. I like visuals (e.g. videos, graphs, images, pictures, tables, charts)</td>
<td>Strongly Disagree</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>d. I like hands-on practice.</td>
<td>Strongly Disagree</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>e. I like sharing with others what I know.</td>
<td>Strongly Disagree</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>f. I like to study in pairs or groups.</td>
<td>Strongly Disagree</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>g. I like to have teacher or workplace mentor guidance.</td>
<td>Strongly Disagree</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>h. I like to watch real-life demonstration.</td>
<td>Strongly Disagree</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>i. I like to watch online demonstration. (e.g. video clips, YouTube)</td>
<td>Strongly Disagree</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>j. I like to study at a scheduled and fixed time.</td>
<td>Strongly Disagree</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>k. I do not set a fixed study schedule, but study whenever I have time.</td>
<td>Strongly Disagree</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
</tbody>
</table>

Please turn over the page 請翻後頁
2.2. What do you do when you have problems in study?

你學習遇問題時，會怎辦？

<table>
<thead>
<tr>
<th>Option</th>
<th>Strongly Disagree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. I ask the teacher or workplace mentor for help.</td>
<td>1 2 3 4 5 6</td>
<td></td>
</tr>
<tr>
<td>我找老師或職場導師幫忙。</td>
<td></td>
<td></td>
</tr>
<tr>
<td>b. I ask my peers for help.</td>
<td>1 2 3 4 5 6</td>
<td></td>
</tr>
<tr>
<td>我找同輩幫忙。</td>
<td></td>
<td></td>
</tr>
<tr>
<td>c. I use my own logical deduction.</td>
<td>1 2 3 4 5 6</td>
<td></td>
</tr>
<tr>
<td>我自己思考答案。</td>
<td></td>
<td></td>
</tr>
<tr>
<td>d. I read notes and textbooks.</td>
<td>1 2 3 4 5 6</td>
<td></td>
</tr>
<tr>
<td>我閱讀筆記和課本。</td>
<td></td>
<td></td>
</tr>
<tr>
<td>e. I search information online.</td>
<td>1 2 3 4 5 6</td>
<td></td>
</tr>
<tr>
<td>我上網尋找資料。</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

2.3. What are your learning difficulties?

你在學習上遇到什麼困難？

<table>
<thead>
<tr>
<th>Option</th>
<th>Strongly Disagree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Understanding theories</td>
<td>1 2 3 4 5 6</td>
<td></td>
</tr>
<tr>
<td>理解理論</td>
<td></td>
<td></td>
</tr>
<tr>
<td>b. Applying theories to practice</td>
<td>1 2 3 4 5 6</td>
<td></td>
</tr>
<tr>
<td>應用理論</td>
<td></td>
<td></td>
</tr>
<tr>
<td>c. Understanding what is expected in the assessment</td>
<td>1 2 3 4 5 6</td>
<td></td>
</tr>
<tr>
<td>明白評估的要求</td>
<td></td>
<td></td>
</tr>
<tr>
<td>d. Following the teacher’s instructions</td>
<td>1 2 3 4 5 6</td>
<td></td>
</tr>
<tr>
<td>跟從老師的指示</td>
<td></td>
<td></td>
</tr>
<tr>
<td>e. Doing hands-on practice</td>
<td>1 2 3 4 5 6</td>
<td></td>
</tr>
<tr>
<td>實務練習</td>
<td></td>
<td></td>
</tr>
<tr>
<td>f. Others (please give example(s))</td>
<td>1 2 3 4 5 6</td>
<td></td>
</tr>
<tr>
<td>其他 (請舉例)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

2.4. How do you find help when you have difficulties in your study?

學習有困難時，你怎樣找幫忙？

<table>
<thead>
<tr>
<th>Option</th>
<th>Strongly Disagree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. I usually understand well what the teacher says in the classroom.</td>
<td>1 2 3 4 5 6</td>
<td></td>
</tr>
<tr>
<td>我通常明白課堂裏老師講解的內容。</td>
<td></td>
<td></td>
</tr>
<tr>
<td>b. I am often able to find help when I don’t understand.</td>
<td>1 2 3 4 5 6</td>
<td></td>
</tr>
<tr>
<td>我不明白時，通常會找到幫助。</td>
<td></td>
<td></td>
</tr>
<tr>
<td>c. The teacher or workplace mentor is often easy to find when I need help from them.</td>
<td>1 2 3 4 5 6</td>
<td></td>
</tr>
<tr>
<td>當學習有困難時，我容易找到老師或職場導師幫忙。</td>
<td></td>
<td></td>
</tr>
<tr>
<td>d. The peers are easy to find when I need help from them.</td>
<td>1 2 3 4 5 6</td>
<td></td>
</tr>
<tr>
<td>當學習有困難時，我容易找到同輩幫忙。</td>
<td></td>
<td></td>
</tr>
<tr>
<td>e. Useful online information is easy to find when I need help.</td>
<td>1 2 3 4 5 6</td>
<td></td>
</tr>
<tr>
<td>當學習有困難時，我容易在網上找到有用的資料。</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
2.5. _______ helped me prepare for the examination?
哪些有助我的考試？

<table>
<thead>
<tr>
<th></th>
<th>Strongly Disagree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Printed PowerPoint slides</td>
<td>印製的 PowerPoint 投影片</td>
<td>1 2 3 4 5 6</td>
</tr>
<tr>
<td>b. Textbooks</td>
<td>教科書</td>
<td>1 2 3 4 5 6</td>
</tr>
<tr>
<td>c. Video clips with quizzes</td>
<td>錄像片段連測驗</td>
<td>1 2 3 4 5 6</td>
</tr>
<tr>
<td>d. Online materials with activities/exercises</td>
<td>上網教材連活動/練習</td>
<td>1 2 3 4 5 6</td>
</tr>
<tr>
<td>e. Face-to-face tutorials</td>
<td>面對面導修</td>
<td>1 2 3 4 5 6</td>
</tr>
<tr>
<td>f. Video recordings</td>
<td>錄像</td>
<td>1 2 3 4 5 6</td>
</tr>
<tr>
<td>g. Practicum</td>
<td>實習</td>
<td>1 2 3 4 5 6</td>
</tr>
</tbody>
</table>

2.6. _______ made it easier for me to learn confusing and difficult topics.
哪些有助理解難懂和易混淆的概念？

<table>
<thead>
<tr>
<th></th>
<th>Strongly Disagree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Printed PowerPoint slides</td>
<td>印製的 PowerPoint 投影片</td>
<td>1 2 3 4 5 6</td>
</tr>
<tr>
<td>b. Textbooks</td>
<td>教科書</td>
<td>1 2 3 4 5 6</td>
</tr>
<tr>
<td>c. Video clips with quizzes</td>
<td>錄像片段連測驗</td>
<td>1 2 3 4 5 6</td>
</tr>
<tr>
<td>d. Online materials with activities/exercise</td>
<td>上網教材連活動/練習</td>
<td>1 2 3 4 5 6</td>
</tr>
<tr>
<td>e. Face-to-face tutorials</td>
<td>面對面導修</td>
<td>1 2 3 4 5 6</td>
</tr>
<tr>
<td>f. Video recordings</td>
<td>錄像</td>
<td>1 2 3 4 5 6</td>
</tr>
<tr>
<td>g. Practicum</td>
<td>實習</td>
<td>1 2 3 4 5 6</td>
</tr>
</tbody>
</table>

Part 3 - Learning Support
第三部分 - 學習支援

Please fill in and circle the information where appropriate.
請填寫資料，並在適當位置圈出答案。

3.1 Do you think the following learning support is useful to you?
你認為以下學習支援，對你有用嗎？

<table>
<thead>
<tr>
<th></th>
<th>Strongly Disagree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Longer class time</td>
<td>加長課時</td>
<td>1 2 3 4 5 6</td>
</tr>
<tr>
<td>b. More extended reading references</td>
<td>增加延伸參考材料</td>
<td>1 2 3 4 5 6</td>
</tr>
<tr>
<td>c. More practice hours</td>
<td>增加練習時間</td>
<td>1 2 3 4 5 6</td>
</tr>
<tr>
<td>d. More industrial attachment and work placement</td>
<td>增加職場實習時間</td>
<td>1 2 3 4 5 6</td>
</tr>
<tr>
<td>e. Study partner or group</td>
<td>溫習同伴或小組</td>
<td>1 2 3 4 5 6</td>
</tr>
<tr>
<td>f. Others (please give example(s))</td>
<td>其他 (請舉例):</td>
<td></td>
</tr>
</tbody>
</table>
3.2 Do e-learning/technology activities help with your study?
網上學習/科技活動可以幫助到你學習嗎？

<table>
<thead>
<tr>
<th>Strongly Disagree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>非常不同意</td>
<td>非常同意</td>
</tr>
</tbody>
</table>

a. The school e-learning platform is helpful for my study.
學校的網上學習平台有助我的學習。
(e.g. Moodle, WebCT, Blackboard)

b. I wish to have more online learning activities for my subject.
我希望有多些網上學習活動，幫助學科學習。

Strongly Disagree
非常不同意

1 2 3 4 5 6

Strongly Agree
非常同意

1 2 3 4 5 6

c. I wish the online learning and teaching activities can have:
我希望網上學習平台有以下的教學活動：

i. reading references 閱讀參考材料
ii. lecture videos 講課錄像
iii. video conferencing 視像會議
iv. demonstration videos 錄像示範
v. learning games 學習遊戲
vi. online exercise 網上練習
vii. online assessment 網上評估
viii. social media chat 小組討論
ix. questionnaire survey 問卷調查
x. others (please give example(s)) 其他（請舉例）

Strongly Disagree
非常不同意

1 2 3 4 5 6

Strongly Agree
非常同意

1 2 3 4 5 6

d. I think e-learning/technology activities have been useful to my study.
網上學習/科技活動對我學習有用。

1 2 3 4 5 6

e. e-learning/ use of technology activities are useful because:
我覺得網上學習/科技活動對我學習有用，因為：(請提出意見)

1 2 3 4 5 6

f. I find flexibility and convenience of using mobile devices in my study. (e.g. smartphone, tablet pc)
流動學習工具有助我的學習。（如：智能電話、平板電腦）

1 2 3 4 5 6

g. I wish to have mobile apps for my subject so that I do not need to connect to the Internet often. It makes me study more convenient.
我希望有多些流動學習應用程式而不用經常接連互聯網，方便隨時學習。

1 2 3 4 5 6

h. I wish to have more mobile learning activities for my subject.
我希望有多些流動學習活動，幫助學科學習。

i. reading references 閱讀參考材料
ii. lecture videos 講課錄像
iii. video conferencing 視像會議
iv. demonstration videos 錄像示範
v. augmented reality (AR) 擴增實境
vi. virtual reality (VR) 虛擬實境
vii. learning games 學習遊戲
viii. online exercise 網上練習
ix. online assessment 網上評估
x. social media chat 小組討論
xi. questionnaire survey 問卷調查
xii. others (please give example(s)) 其他（請舉例）

1 2 3 4 5 6
i. I think mobile learning/technology is helpful to my study.
流動學習/科技有助我學習。

j. Use of mobile learning/technology is useful to learning because:
(please give your comment)
我覺得流動學習/科技對學習有用，因為：(請提供意見)

~ Thank you ~
~ 謝謝~
Appendix II: Questionnaire for Teachers

Centre for Learning and Teaching | VTC

職業訓練局教學中心

A Cross-institutional Study of Vocational Education and Training (VET) Students’ Learning Needs as well as Teachers and Workplace Mentors’ Teaching Practices
(For teacher)

聯校職業培訓教育-學生學習需要及老師和職場導師的教學常規研究調查
(教師問卷)

Vocational Training Council (VTC), The Open University of Hong Kong (OUHK), Caritas Institute of Higher Education (CIHE) and Caritas Bianchi College of Careers (CBCC) are now collaborating on a project titled “Development of Effective Pedagogical Practices and a Cross-institutional Online Sharing Platform for Hong Kong’s Vocational Education and Training (VET)”.

職業訓練局、香港公開大學、明愛專上學院及明愛白英奇專業學校現正進行一項名為「聯校職業培訓教育－創新學與教資源共享平台」的計劃。

The project includes a survey on the teaching and learning environment of vocational education and training. The study aims to:

• identify the learning and teaching needs of Hong Kong VET students, teachers and workplace mentors;
• identify specific instructional strategies for VET; and
• derive innovative pedagogical practices to accommodate the educational needs of VET.

本計劃現正進行研究調查，收集職業培訓教育的學生、教師及職場導師對職業培訓教育的意見。本調查目的在：

• 了解香港職業培訓教育的學生、教師和職場導師的學習和教學需要；
• 分辨香港職業培訓教育獨持的教學策略；及
• 創立嶄新的教學方法，切合本地職業培訓教育的需要。
We would like to invite you to complete the following questionnaire. Your input would help us design and develop better learning and teaching practices to achieve more effective vocational education and training.

請完成以下問卷。你的意見將對改善本地職業培訓教學有莫大裨益。

The data are collected solely for the captioned study. Your participation is totally voluntary and you are free to withdraw from the research at any time if inappropriateness found. You will just fill out the questionnaire, and there is no other obligation.

所有資料皆用於本研究，參與全屬自願，所以你沒有義務一定要參與。你可隨時退出本研究。

All responses from participants will be kept strictly confidential and individual participants are not identified in the analysis of the data. The collected data will be solely used for research purposes. Electronic data collected will be encrypted, and all data collected (both hard paper copies and data in electronic format) will be stored in secured drawers for a maximum of five years only at Centre for Learning and Teaching, Vocational Training Council, 12/F VTC Tower, 27 Wood Road, Wan Chai, Hong Kong. Thereafter, all the data will be destroyed.

所有資料皆保密及佚名，並祇會用於本研究。相關文件、光碟等皆密存於香港灣仔活道二十七號職業訓練局大樓十二樓教學中心內的檔案匣，並於五年後銷毀。

The final report (in PDF version) of this study can be obtained from the Principal Investigator of this study Dr Ng Yuk Kwan, Ricky via email: rickyng@vtc.edu.hk.

如欲索取本研究報告，歡迎電郵至 rickyng@vtc.edu.hk 與本研究之首席研究員伍鈺堃博士聯絡。

Please fill in and circle the information where appropriate for each statement. Please answer the questions to your best knowledge and judgement.

請填寫問卷，並按你的認識作最佳判斷，圈出每個句子的答案。

Thank you for your participation.

多謝參與。

Centre for Learning and Teaching, Vocational Training Council

職業訓練局教學中心

January 2016

二零一六年一月
Questionnaire (Teacher)
問卷(教師)

Part 1 - General Information
第一部分 - 一般資料

Please fill in and circle the information where appropriate.
請填寫資料,並在適當位置圈出答案。

1.1 What are your roles in your institute? 你在學院的角色是什麼？

   a. I teach classes of students (including student assessment).
      我教書(包括學生評估)。
      No  Yes  (____________ hr(s)/wk 小時/星期)
   b. I also write module syllabus.
      我亦編寫科目大綱。
      No  Yes
   c. I am also a module coordinator.
      我亦是科目統籌。
      No  Yes
   d. I am also the programme coordinator.
      我亦是課程統籌。
      No  Yes
   e. I am also responsible for student industrial attachment (IA)/work placement matters.
      我亦負責學生的職場實習事宜。
      No  Yes
   f. I also work with workplace mentor(s).
      我也和職場導師一起合作。
      No  Yes
   g. Other duty:
      其他職責:

Part 2 - Teaching Practices
第二部分 - 教學實況

Please fill in and circle the information where appropriate.
請填寫資料,並在適當位置圈出答案。

2.1 How often do you carry out the following teaching and learning activities (TLA) in the classroom?
以下的教學活動，你會多久在課堂進行一次？

   Please answer to your best knowledge and judgement.

   Never  Always

   a. Give lectures 講課
   b. Offer demonstrations 示範
   c. Provide hands-on practices 實務練習
   d. Conduct e-learning/technology activities
   提供網上學習/使用科技進行教學活動

Example(s), if any:
例如：

Please turn over the page 請翻後頁
### 2.2 How often do you use the following activities in your teaching?

<table>
<thead>
<tr>
<th></th>
<th>Never</th>
<th>Always</th>
</tr>
</thead>
<tbody>
<tr>
<td>e. I give notes to students.</td>
<td>1 2 3 4 5 6</td>
<td></td>
</tr>
<tr>
<td>f. I use multimedia in class, <em>(e.g. videos, websites, YouTube)</em></td>
<td>1 2 3 4 5 6</td>
<td></td>
</tr>
<tr>
<td>g. I capture or record my lectures, and let my students view them afterwards.</td>
<td>1 2 3 4 5 6</td>
<td></td>
</tr>
<tr>
<td>h. I keep in touch with students after class.</td>
<td>1 2 3 4 5 6</td>
<td></td>
</tr>
<tr>
<td>i. I communicate with students via online social network. <em>(e.g. Facebook, WeChat, WhatsApp)</em></td>
<td>1 2 3 4 5 6</td>
<td></td>
</tr>
<tr>
<td>j. I prepare my lesson before class (alone).</td>
<td>1 2 3 4 5 6</td>
<td></td>
</tr>
<tr>
<td>k. I prepare my lesson before class (with colleagues).</td>
<td>1 2 3 4 5 6</td>
<td></td>
</tr>
<tr>
<td>l. I go to the library to look for teaching references.</td>
<td>1 2 3 4 5 6</td>
<td></td>
</tr>
<tr>
<td>m. I search online for teaching references.</td>
<td>1 2 3 4 5 6</td>
<td></td>
</tr>
</tbody>
</table>

### 2.3 What do you teach in class?

<table>
<thead>
<tr>
<th></th>
<th>Never</th>
<th>Always</th>
</tr>
</thead>
<tbody>
<tr>
<td>f. Knowledge <em>(e.g. theories, concepts, principles, procedures, rules)</em></td>
<td>1 2 3 4 5 6</td>
<td></td>
</tr>
<tr>
<td>g. Trade-specific skills <em>(e.g. hands-on practice, techniques, demonstration)</em></td>
<td>1 2 3 4 5 6</td>
<td></td>
</tr>
<tr>
<td>h. Workplace Etiquette <em>(e.g. work attitudes, work ethics, values)</em></td>
<td>1 2 3 4 5 6</td>
<td></td>
</tr>
<tr>
<td>i. Application of knowledge</td>
<td>1 2 3 4 5 6</td>
<td></td>
</tr>
<tr>
<td>j. Analysis of problems</td>
<td>1 2 3 4 5 6</td>
<td></td>
</tr>
</tbody>
</table>
2.4 What do your students learn in industrial attachment (IA) or work placement?

你的學生在職場實習中學什麼？

Never 从不 Always 常常

f. Knowledge (e.g. theories, concepts, principles, procedures, rules)
知識(如：理論、概念、原理、步驟、規則)

Never 从不 Always 常常

1 2 3 4 5 6

g. Trade-specific skills (e.g. hands-on practice, techniques, demonstration) 行業專門技能(如：實務練習、技術、示範)

Never 从不 Always 常常

1 2 3 4 5 6

h. Workplace Etiquette (e.g. work attitudes, work ethics, values)
工作禮儀(如：工作態度、工作倫理、價值觀)

Never 从不 Always 常常

1 2 3 4 5 6

i. Application of knowledge 知識的應用

Never 从不 Always 常常

1 2 3 4 5 6

j. Analysis of problems 分析問題

Never 从不 Always 常常

1 2 3 4 5 6

Part 3 - Teaching Needs and Preferences

第三部分 - 教學需要及教學傾向

Please fill in and circle the information where appropriate.

請填寫資料，並在適當位置圈出答案。

3.1 What is the effectiveness of the following instructional strategies?

請評價下列教學設計策略的效能

Strongly Disagree 非常不同意 Strongly Agree 非常同意

l. Lecturing is effective in teaching theories.
講課對教授理論有效。

1 2 3 4 5 6

m. Video demonstration enhances my explanation.
錄像示範使教師解釋更清楚。

1 2 3 4 5 6

n. Animated learning material attracts student attention.
以動畫演示教學材料較能吸引學生注意。

1 2 3 4 5 6

o. Instant feedback tools (e.g. clickers) help engage students in their learning.
即時反饋工具(如：答題器)使學生更投入學習。

1 2 3 4 5 6

p. Worksheets are effective as in-class activities.
工作紙是有效的課堂活動。

1 2 3 4 5 6

q. I think the majority of students’ learning time should be used on teaching content knowledge in the classroom.
我認為大部分學生學習時間應放在課堂傳授內容知識上。

1 2 3 4 5 6

r. At present, hands-on practice aids the application of the knowledge learned.
實務練習有助應用學習。

1 2 3 4 5 6

s. Sufficient attention is given to individual students.
我對每位學生有足夠的關注。

1 2 3 4 5 6

t. I am usually available to give feedback to students after class. 下課後我時常可以為學生提供反饋。

1 2 3 4 5 6

u. Direct instruction or lecture is good for student learning.
給予直接指示或講課有助學生學習。

1 2 3 4 5 6

v. Students retain learning better when they can find the answers to questions on their own.
學生自己尋找到問題的答案，會較容易記得學習內容。

1 2 3 4 5 6

w. Peer teaching/learning is a useful learning method.
同輩教導/學習是有效的學習方法。

1 2 3 4 5 6

Please turn over the page 請翻後頁
3.2 What are the difficulties you have encountered during your teaching?

你在教學上有什麼困難？

<table>
<thead>
<tr>
<th></th>
<th>Strongly Disagree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>g.</td>
<td>Class time is not enough.</td>
<td>1 2 3 4 5 6</td>
</tr>
<tr>
<td>h.</td>
<td>Teaching has been much restricted by the limited time and space of the class time.</td>
<td>1 2 3 4 5 6</td>
</tr>
<tr>
<td>i.</td>
<td>I have only limited time to give adequate attention to individual students.</td>
<td>1 2 3 4 5 6</td>
</tr>
<tr>
<td>j.</td>
<td>Students require repetitive explanation which I am not able to provide them adequately.</td>
<td>1 2 3 4 5 6</td>
</tr>
<tr>
<td>k.</td>
<td>Not enough teaching aids. (e.g. videos, exercises, examples)</td>
<td>1 2 3 4 5 6</td>
</tr>
<tr>
<td>l.</td>
<td>At present, hands-on practice is not sufficient.</td>
<td>1 2 3 4 5 6</td>
</tr>
<tr>
<td>m.</td>
<td>I find it difficult to monitor student learning progress.</td>
<td>1 2 3 4 5 6</td>
</tr>
<tr>
<td>n.</td>
<td>Others (please give example(s)):</td>
<td>1 2 3 4 5 6</td>
</tr>
</tbody>
</table>

3.3 How do you enhance your teaching?

你會怎樣提升教學質素？

<table>
<thead>
<tr>
<th></th>
<th>Strongly Disagree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>f.</td>
<td>I ask my colleagues for advice.</td>
<td>1 2 3 4 5 6</td>
</tr>
<tr>
<td>g.</td>
<td>I read text-based references. (e.g. Journal articles, books)</td>
<td>1 2 3 4 5 6</td>
</tr>
<tr>
<td>h.</td>
<td>I watch training videos. (e.g. TED Talks, YouTube on education)</td>
<td>1 2 3 4 5 6</td>
</tr>
<tr>
<td>i.</td>
<td>I attend training sessions. (e.g. workshops, seminars)</td>
<td>1 2 3 4 5 6</td>
</tr>
<tr>
<td>j.</td>
<td>I find information online.</td>
<td>1 2 3 4 5 6</td>
</tr>
<tr>
<td>k.</td>
<td>I attend Massive Open Online Courses (MOOC).</td>
<td>1 2 3 4 5 6</td>
</tr>
<tr>
<td>l.</td>
<td>I believe my current teaching is effective already. There is no need for improvement.</td>
<td>1 2 3 4 5 6</td>
</tr>
</tbody>
</table>
3.4 Is it easy to find resources and advice on teaching?

你容易找到教學資源或教學的意見嗎？

<table>
<thead>
<tr>
<th>option</th>
<th>Strongly Disagree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>f. Teaching resources and references are plentiful in the library.</td>
<td>1 2 3</td>
<td>4 5 6</td>
</tr>
<tr>
<td>g. My colleagues are resourceful.</td>
<td>1 2 3</td>
<td>4 5 6</td>
</tr>
<tr>
<td>h. Teaching and Learning Packages (TLPs) are readily available.</td>
<td>1 2 3</td>
<td>4 5 6</td>
</tr>
<tr>
<td>i. Online resources are readily available and convenient to use.</td>
<td>1 2 3</td>
<td>4 5 6</td>
</tr>
</tbody>
</table>

Part 4 - Teaching Support

第四部分 - 教學支援

Please fill in and circle the information where appropriate. 

請填寫資料，並在適當位置圈出答案。

4.1 I would like to have the following teaching support.

如果能夠提供以下教學支援，將會對我的教學有所增益：

<table>
<thead>
<tr>
<th>option</th>
<th>Strongly Disagree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>g. Longer class time 加長課時</td>
<td>1 2 3</td>
<td>4 5 6</td>
</tr>
<tr>
<td>h. Multi-site live broadcasting of my lecture/tutorial 採用多站點現場直播我的講課/導修</td>
<td>1 2 3</td>
<td>4 5 6</td>
</tr>
<tr>
<td>i. Multiple learning channels for students’ self-regulated learning 為學生提供多種學習渠道，讓他們自主學習</td>
<td>1 2 3</td>
<td>4 5 6</td>
</tr>
<tr>
<td>j. A dedicated online platform for teaching material sharing between different vocationally oriented institutes 設立專用網上平台，供不同職業導向訓練學校分享教學材料</td>
<td>1 2 3</td>
<td>4 5 6</td>
</tr>
<tr>
<td>k. A sharing platform for discussion and experience sharing 設立分享平台，分享討論，交流經驗</td>
<td>1 2 3</td>
<td>4 5 6</td>
</tr>
<tr>
<td>l. Enhanced Teaching and Learning Packages (TLPs) with teaching guides and suggestions 增加學習指引及建議使教材套內容更豐富</td>
<td>1 2 3</td>
<td>4 5 6</td>
</tr>
<tr>
<td>m. Suggested interactive activities (e.g. games) 增添建議的互動活動 (如：遊戲)</td>
<td>1 2 3</td>
<td>4 5 6</td>
</tr>
<tr>
<td>n. Practice assessments and exercises (e.g. questions bank) 提供評估測驗和練習 (如：題目庫)</td>
<td>1 2 3</td>
<td>4 5 6</td>
</tr>
<tr>
<td>o. Guidebooks on how to work with workplace mentors. 提供怎樣與職場導師合作的指引</td>
<td>1 2 3</td>
<td>4 5 6</td>
</tr>
<tr>
<td>p. Others (please give example(s)): 其他(請舉例)：</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Please turn over the page 請翻後頁
4.2 How do e-learning/technology activities help with your teaching?

網上學習/科技活動怎樣可以幫到你教學？

<table>
<thead>
<tr>
<th></th>
<th>Strongly Disagree</th>
<th>Strongly Agree</th>
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<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>

a. I always use the Learning Management Platform (LMP) provided by my institute. (e.g. Moodle, WebCT, Blackboard)

我經常使用學校的學習管理平台。(如：Moodle, WebCT, Blackboard)

b. In addition to uploading and downloading documents, I also use other functions provided in the LMP.

除了上載和下載文件，我還用學習管理平台提供的其他功能。

c. The LMP I am using is suitable for vocational education and training.

我現正使用的學習管理平台適合職業培訓教育用途。

d. I wish to have more online learning activities for my subject.

我希望有更多網上學習活動，以鞏固我的學科教學。

e. I wish the online learning platform can have the following learning and teaching activities:

我希望網上學習平台有以下的教學活動：

1. reading references 閱讀參考材料
2. lecture videos 講課錄像
3. video conferencing 視像會議
4. demonstration videos 錄像示範
5. learning games 學習遊戲
6. online exercise 網上練習
7. online assessment 網上評估
8. social media chat 社交網絡群組
9. questionnaire survey 問卷調查
x. Others (please give example(s)) 其他（請舉例）

f. I think e-learning/technology activities have been useful to my teaching.

我認為網上學習/科技活動有助我的教學。

g. I think e-learning/technology activities have been useful because:

(please give your comment)

我認為網上學習/科技活動有助我的教學，因為：（請提供意見）

h. I find flexibility and convenience of using mobile devices in my teaching. (e.g. smartphone and tablet pc)

流動裝置令我的教學更方便及更具彈性。(如：智能手機，平板電腦)

i. I wish to have more mobile learning activities for teaching.

我希望有多些流動學習活動，幫助學科教學。

j. I wish to have the following mobile learning activities:

我希望有以下的流動學習活動：

1. reading references 閱讀參考材料
2. lecture videos 講課錄像
3. video conferencing 視像會議
4. demonstration videos 錄像示範
5. augmented reality (AR) 擴增實境
6. virtual reality (VR) 虛擬實境
7. learning games 學習遊戲
8. online exercise 網上練習
9. online assessment 網上評估
<table>
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<th></th>
<th></th>
<th>Strongly Disagree</th>
<th>Strongly Agree</th>
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<tbody>
<tr>
<td>x.</td>
<td>social media chat</td>
<td>社交網絡群組</td>
<td>1 2 3 4 5 6</td>
</tr>
<tr>
<td>xi.</td>
<td>questionnaire survey</td>
<td>問卷調查</td>
<td>1 2 3 4 5 6</td>
</tr>
<tr>
<td>xii.</td>
<td>others (please give example(s))</td>
<td>其他 (請舉例)</td>
<td>1 2 3 4 5 6</td>
</tr>
</tbody>
</table>

k. I think mobile learning/technology is helpful to my teaching. 流動學習/科技有助我的教學。

l. Use of mobile learning/technology is useful to teaching because: (please give your comment) 我覺得流動學習/科技對教學將會有用，因為：(請給意見)

~ Thank you~  
~ 謝謝 ~
Appendix III: Focus Group Interview Questions for Students

A Cross-institutional Study of Vocational Education and Training (VET)
Students’ Learning Needs as well as Teachers and Workplace Mentors’ Teaching Practices

Focus Group Interview Questions (Student)

Part 1 - General Information

1.1 What is your programme you are studying? Which year are you now enrolled in?
你在學校唸甚麼？現時幾年級？

1.2 Which modules are you studying?
目前唸甚麼科目？

Part 2 - Learning Practices

2.1 When and where do you like to study? Why?
你喜歡在甚麼時候、甚麼地方溫習？為甚麼？

Do you like to study alone? If not, who do you like to study with? Why?
你喜歡獨自溫習嗎？如不喜歡，那你喜歡跟誰溫習？為甚麼？

What learning tools do you usually use? Why?
你用哪些學習工具溫習？為甚麼？

2.2 What do you like about your lessons in the classroom? Why?
你喜歡課堂的甚麼？為甚麼？

What do you dislike about your lessons in the classroom? Why?
你不喜歡課堂的甚麼？為甚麼？

What are some learning difficulties you have faced in the classroom?
你上課時遇過甚麼難題呢？

Where and from whom would you like to seek help when you have learning difficulties in the classroom? Can you give us some examples?
當你在課堂遇到困難時，你會在哪裡及向誰尋求幫助呢？可舉例嗎？

2.3 From your experience, how do you usually solve learning problems in class or during your industrial attachment? What strategies you do use?
你過去經驗中，你通常怎樣解決在上課或職場實習遇到的問題？你有甚麼策略？

2.4 Has technology helped you solve the above problems? If so, how?
你認為科技能解決上述問題嗎？如果能夠，請述如何解決？

2.5 In what way should teachers express or present their teaching content in order to enhance and consolidate your learning in the classroom lessons and in your industrial attachment?
你認為老師應如何表達／鋪排資訊，才能協助你加深對課堂學習和職場實習的所學所得？
How should information be stored and accessed to facilitate your revision?
如何存取資訊才能方便你複習？

Part 3       -  Learning with Technology
第三部分： 使用科技學習的意見

3.1 What kinds of support would you wish to have in your classroom lessons and industrial attachment?
(e.g. reference materials, practice assessment, lecture capture for online viewing, etc.)
在日常課堂上及職場實習(IA) 時，你希望得到甚麼支援？(如：參考資料、研習試題、網上課堂短片重溫等)

3.2 How can the following technologies be used effectively to help you learn in your classroom or in your revision?
以下科技怎樣才能夠有效地輔助你課堂學習或溫習？
(e.g. provision of information, hands-on practice, practice assessment, sharing platform) (如：提供資料、實務操練、研習試題、交流平台等)

Social media (e.g. Facebook, Twitter, WhatsApp)
社交媒體和群組

Augmented Reality/ Virtual Reality (AR/VR)
擴展實景 / 虛擬實景

Video Capture System
演講錄影系統

Massive Open Online Course (MOOC)
大規模開放網絡課程

Other mobile apps
手機應用程式

3.3 Which learning aid/ technology do you prefer using in your study? Why?
以下科技，哪項你學習時會喜歡選用？為甚麼？
   a. Print copies 印刷品
   b. PC/ Laptop 電腦/筆記本電腦
   c. Mobile phone 手提電話
   d. Tablet (e.g. iPad) 手寫板

3.4 Do you have any suggestions in using technology and online resources to help with your study?
你在運用科技學習及網上資源上有何建議？

~ End~
~ 完 ~
Appendix IV: Focus Group / Individual Interview Questions for Teachers

A Cross-institutional Study of Vocational Education and Training (VET) Students’ Learning Needs as well as Teachers and Workplace Mentors’ Teaching Practices

Interview Questions (Teacher)
訪問題目(老師)

Part 1 - General Information
第一部分：基本資料

1.1 Have you received any teacher training before? If yes, what is it?
有否接受師訓？如有，是甚麼？

1.2 How many years have you been teaching in this institute?
你在本校的教學年資有多久？

1.3 Which year(s) of programme(s) are you teaching?
你教學的對象幾年級？

1.4 Which module(s) are you teaching?
你現在教授的學科是甚麼？

Are you the Module Coordinator or Programme Coordinator?
你是科目統籌或課程統籌嗎？

If yes, which module/programme do you belong to?
如是，哪一科呢？

1.5 Are you an IA Coordinator? If so, which field/workplace are you responsible for?
你是實習統籌嗎？如是，你負責哪範疇的實習呢？

Part 2 - Teaching Practices
第二部分：現時的教學情況

2.1 What problems do teachers generally encounter in teaching the modules or in the discussion of issues with students?
教授學科或討論課題時，老師通常遇到甚麼問題？

How do they tackle them to help student learn more effectively?
老師怎樣解決這些問題，令學生更能掌握課堂內容？

2.2 What teaching method(s) do you adopt in teaching your modules or in your discussion of issues with students? What learning and teaching activities do you design to facilitate students’ learning? Please give us some examples.
你會採用甚麼教學方法去教授學科或討論課題？你設計甚麼教學活動幫助學生學習？請舉例說明。

2.3 Are the teaching resources/support sufficient for you to teach your module(s)?
你所屬學科的教學資源/支援足夠嗎？
Do you wish to have more training on teaching pedagogy, guidance skills or other skills? Please specify.
你希望有更多有關教學法、指導技巧或其他技巧的訓練嗎？請具體說明。

2.4 Have you made use of the Learning Management Platform (LMP) provided by the institute?
(e.g. uploading course materials, conducting teaching activities and assessment, collection of assignments, etc.)
你有否使用學校提供給你的學習管理平台？(如上載教材、進行教學活動、評估、收功課等)

2.5 Have you used other technology to assist teaching or to conduct assessment?
你用過其他科技來幫助教學或作評估嗎？

If yes:
What technology have you used?
Why do you choose to use the technology?
When do you use it? How do you use it?
Have you encountered any difficulties?
如是：用了甚麼科技？為何用？何時用？如何運用？有何困難？

If no, why have you not used it?
(e.g. unsuitable / no idea about how to use it? No idea about what technology is available?)
如否：為何不用？（不適用 / 不知怎樣運用？不知有何科技合用？）

2.6 What are the pros and cons of the technology used in teaching?
你覺得科技教學有何利弊？

In what ways does it benefit teachers and students?
教師和學生哪些方面得益？

Will it enhance the effectiveness of teaching? Why?
教學效能提升嗎？為甚麼？
Part 3 - Teaching with Technology
第三部分：使用科技教學的意見

3.1 What kinds of support would you expect for industrial attachment for students? (e.g. interactive course content, online assessment, lecture capture for online viewing, etc.)
你覺得學生在職場實習(IA)時，需要甚麼支援？(如：互動教材、網上評估、網上課堂短片重溫等)

3.2 How can the following technologies be used effectively to help your teaching?
以下科技怎樣才能夠有效地輔助你教學？

(e.g. provision of information, hands-on practice, practice assessment, sharing platform, etc.)
(如：提供資料、實務操練、研習試題、分享平台等)

Social media (e.g. Facebook, Twitter, WhatsApp)
社交媒體和群組

Augmented Reality/ Virtual Reality (AR/VR)
擴展實景 / 虛擬實景

Video Capture System
演講錄影系統

Massive Open Online Course (MOOC)
大規模開放網絡課程

Other mobile apps
手機應用程式

3.3 Which learning aid/ technology do you prefer? Why?
以下科技，哪項你會喜歡選用？為甚麼？

a. Print copies 印刷品
b. PC/ Laptop 電腦/筆記本電腦
c. Mobile phone 手提電話
d. Tablet (e.g. iPad) 手寫板

3.4 What are your suggestions for the use of technology and online resources?
你在運用科技教學及網上資源上有何建議？

~End~
～完～
Appendix V: Individual Interview Questions for Workplace Mentors

A Cross-institutional Study of Vocational Education and Training (VET) Students’ Learning Needs as well as Teachers and Workplace Mentors’ Teaching Practices

Interview Questions (Workplace Mentor)

訪問問題(職場導師)

Part 1 - General Information

第一部分：基本資料

1.1 Name of workplace 職場名稱

1.2 Industry / Trade 行業 / 工種

1.3 Programme 所屬課程

1.4 Have you received any teacher training before? If yes, what is it? 有否接受師訓？如有，是甚麼？

1.5 How many years have you been mentoring in this workplace? 你在本工作間的教導年資有多久?

1.6 Are you an IA Coordinator? If so, which field/workplace are you responsible for? 你是實習統籌嗎？如是，你負責哪範疇的實習呢？

Part 2 - Workplace Mentorship Practices

第二部分：現時職場指導的情況

2.1 What are your roles in the workplace? 你在職場的角色是甚麼？

2.2 What problems do mentors generally encounter in teaching trade-specific skills and workplace etiquette? 傳授行業專門技能及工作禮儀時，職場導師通常遇到甚麼問題？

How do you tackle them to help student learn more effectively? 你怎樣解決問題，令學生更能掌握課堂內容？

2.3 What teaching method(s) do you adopt in teaching trade-specific skills and workplace etiquette? 傳授行業專門技能及工作禮儀時，你用甚麼方法來教學？

What activities do you design to facilitate students’ learning in the workplace? Can you give us some examples? 你設計甚麼教導活動幫助學生實習？請舉例說明。
2.4 What teaching materials have you designed or used?  
(e.g. notes, worksheets, assessment)  
你設計或用過哪類教學材料？（如筆記、工作紙、評估）

2.5 Are the teaching resources/support related to your industry/trade sufficient?  
你所屬行業/工種的教學資源/支援足夠嗎？

Do you wish to have more training on teaching pedagogy, guidance skills or other skills?  
Please specify.
你希望有更多有關教學法、指導技巧或其他技巧的訓練嗎？請具體說明。

2.6 Have you used technology to assist teaching or to conduct assessment?  
你用過科技來幫助教導或作評估嗎？

If yes:  
What technology have you used?  
Why do you choose to use the technology?  
When do you use it?  
How do you use it?  
Have you encountered any difficulties?  
如是：用了甚麼科技？為何用？何時用？如何運用？有何困難？

If no, why have you not used it?  
(e.g. unsuitable / no idea about how to use it? No idea about what technology is available?)  
如否：為何不用？（不適用 / 不知怎樣運用？不知有何科技合用）

2.7 What are the pros and cons of the technology used in mentorship?  
你覺得科技教導有何利弊？

In what ways does it benefit mentors, and students?  
職場導師和學生哪些方面得益？

Will it enhance the effectiveness of mentorship?  
教學效能提升嗎？
Part 3 - Teaching with Technology
第三部分：使用科技教導的意見

3.1 What kinds of support would you wish students to have in their industrial attachment? (e.g. interactive course materials, online assessment, video capture of lectures for online viewing, etc.)
你覺得學生在職場實習(IA)時，需要甚麼支援？(如：互動教材、網上評估、網上課堂短片重溫等)

3.2 How can the following technologies be used effectively to help your mentorship?
以下科技怎樣才能夠有效地輔助你教導？

(e.g. provision of information, hands-on practice, practice assessment, sharing platform, etc.)
(如：提供資料、實務操練、研習試題、分享平台等)

Social media (e.g. Facebook, Twitter, WhatsApp)
社交媒体和群组

Augmented Reality/ Virtual Reality (AR/VR)
擴展實景 / 虛擬實景

Video Capture System
演講錄影系统

Massive Open Online Course (MOOC)
大規模開放網絡課程

Other mobile apps
手機應用程式

3.3 Which learning aid/ technology do you prefer? Why?
以下科技，哪項你會喜歡選用？為甚麼？

a. Print copies 印刷品
b. PC/ Laptop 電腦/筆記本電腦
c. Mobile phone 手提電話
d. Tablet (e.g. iPad) 手寫板

3.4 What are your suggestions in using technology and online resources?
你在運用科技教導及網上資源上有何建議？

~End~
～完～
Appendix VI: Class / Workplace Visit Observation Form

Class / Workplace Visit: Educational Technology Checklist (Abridged)

Remember: 1) The purpose of this class observation is to understand how educational technology is used in the teaching/training venue in order to gain insights and make suggestions for technology enhanced learning where appropriate. 2) The teaching/training skills and styles is not the focus. 3) Do not write the name of the teacher/workplace mentor visited on the form.

In additional to using the checklist, please take detail notes of the observation as much as possible for elaboration and explanation of the data collected.

1. Setting

<table>
<thead>
<tr>
<th>Date of visit:</th>
<th>No. of teacher/workplace mentor:</th>
<th>No. students:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time started:</td>
<td>Time ended:</td>
<td></td>
</tr>
</tbody>
</table>

Name of institute/workplace:

Programme area:

- Hotel and Catering
- Business and Management
- Health Care and Community Services
- Servicing
- Other (Please specify):  

Venue:

- Lecture hall
- Classroom
- Laboratory
- Workshop
- Workplace (Please specify):  
- Other (Please specify):  

2. 10-minute chart (Mark slots where suitable depending on observation period.)

During each 10-minute period, how was technology used for and activities pattern of learning and teaching? (Check ‘✓’ where appropriate)

<table>
<thead>
<tr>
<th>00-10</th>
<th>10-20</th>
<th>20-30</th>
<th>30-40</th>
<th>40-50</th>
<th>50-60</th>
<th>Remarks: (e.g. examples of technology used)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Technology is:

- used by teacher/workplace mentor
- used for teacher/workplace mentor
- used by students
- used for learning

Activity used:

- Individual work
- Pair/Small group
- Whole class
- Teacher/Workplace mentor-directed
- Student-directed

3. Estimated time technology used (if 10-minute chart was not used)?

(Round up the minutes to the closest integer of 10. Also make note of the activity used.)

Total minutes technology used by teacher/workplace mentor:

Minutes teacher/workplace mentor used technology for teaching/mentoring:

Total minutes technology used by students:

Minutes teacher/workplace mentor used technology for learning:

4. How essential was technology to the learning and teaching activities in this session? (Check ‘✓’ where appropriate)

- Not needed; other approaches would be better.
- Somewhat useful; other approaches would be as effective.
- Useful; other approaches would less effective.
- Essential; the lesson could not be done without it.
- Other comment:

5. General observation and comments

(e.g. student responsiveness to technology used in the classroom, what were the technologies used)
Appendix VII: Online Questionnaire for Students
Website: https://vpetcity.vtc.edu.hk/qesssurvey/index.php/668818?lang=en

A Cross-Institutional Study of Vocational Education and Training (VET)
Students' Learning Needs as well as Teachers and Workplace Mentors' Teaching Practices
(For student)
Centre for Learning and Teaching | VTC

Vocational Training Council (VTC), The Open University of Hong Kong (OUHK), Caritas Institute of Higher Education (CIHE) and Caritas Bianchi College of Careers (CBCC) are now collaborating on a project titled "Development of Effective Pedagogical Practices and a Cross-institutional Online Sharing Platform for Hong Kong's Vocational Education and Training (VET)."

The project includes a survey on the teaching and learning environment of vocational education and training. The study aims to:
- identify the learning and teaching needs of Hong Kong VET students, teachers and workplace mentors;
- identify specific instructional strategies for VET; and
- derive innovative pedagogical practices to accommodate the educational needs of VET.

We would like to invite you to complete the following questionnaire. Your input would help us design and develop better learning and teaching practices to achieve more effective vocational education and training.

The data are collected solely for the captioned study. Your participation is totally voluntary and you are free to withdraw from the research at any time if inappropriateness found. You will just fill out the questionnaire, and there is no other obligation.

All responses from participants will be kept strictly confidential and individual participants are not identified in the analysis of the data. The collected data will be solely used for research purposes. Electronic data collected will be encrypted, and all data collected (both hard paper copies and data in electronic format) will be stored in secured drawers for a maximum of five years only at Centre for Learning and Teaching, Vocational Training Council, 12/F VTC Tower, 27 Wood Road, Wan Chai, Hong Kong. Thereafter, all the data will be destroyed.

Thank you for your participation.

Centre for Learning and Teaching, Vocational Training Council

January 2016

There are 34 questions in this survey.

A note as privacy
The record of your survey responses does not contain any identifying information about you, unless a specific survey question explicitly asks for it. If you used an identifying token to access this survey, please note assured that this token will not be stored together with your responses. It is managed in a separate database and will only be updated to indicate whether you did (or did not) complete this survey. There is no way of matching identification tokens with survey responses.
**A Cross-institutional Study of Vocational Education and Training (VET)**

**Students' Learning Needs as well as Teachers and Workplace Mentors' Teaching Practices**

**Part 1 - Learning Practices**

Please fill in and select the information where appropriate.

### 1.1 How often are the following teaching and learning activities (TLA) used in the classroom?

<table>
<thead>
<tr>
<th>Activity</th>
<th>Never</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>Always</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Lectures</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>b. Demonstrations</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>c. Hands-on practices</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>d. Tutorials</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>e. e-learning/Use of technology activities</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Example(s), if any:

### 1.2 How often do you do the following when you study your modules?

<table>
<thead>
<tr>
<th>Activity</th>
<th>Never</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>Always</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Appendix VIII: Online Questionnaire for Teachers

Website: https://vpetcity.vtc.edu.hk/qesssurvey/index.php/576766?lang=en

A Cross-institutional Study of Vocational Education and Training (VET)
Students' Learning Needs as well as Teachers and Workplace Mentors' Teaching Practices
For Teacher
Centre for Learning and Teaching | VTC

Vocational Training Council (VTC), The Open University of Hong Kong (OUHK), Caritas Institute of Higher Education (CIHE) and Caritas Bianchi College of Careers (CBCC) are now collaborating on a project titled "Development of Effective Pedagogical Practices and a Cross-institutional Online Sharing Platform for Hong Kong Vocational Education and Training (VET)."

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All responses from participants will be kept strictly confidential and individual participants are not identified in the analysis of the data. The collected data will be solely used for research purposes. Electronic data collected will be encrypted, and all data collected (both hard copy copies and data in electronic format) will be stored in secured drawers for a maximum of five years only at Centre for Learning and Teaching, Vocational Training Council, 12/F VTC Tower, 27 Wood Road, Wan Chai, Hong Kong. Thereafter, all the data will be destroyed.

The final report (in PDF version) of this study can be obtained from the Principal Investigator of this study Dr Ng Yuk Kwan, Ricky via email: rickgyk@vtc.edu.hk.

Please fill in and select the information where appropriate for each statement. Please answer the questions to your best knowledge and judgement.

Thank you for your participation.

Centre for Learning and Teaching, Vocational Training Council
January 2016

There are 30 questions in this survey.

A note on privacy
This survey is anonymous.

The record of your survey responses does not contain any identifying information about you, unless a specific survey question explicitly asks for it. If you used an identifying token to access the survey, please note assured that this token will not be accessed together with your responses. It is managed in a separate database and will only be used to validate whether you did (or did not) complete the survey. There is no way of matching identification tokens with survey responses.
<table>
<thead>
<tr>
<th>Question</th>
<th>Choices</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>Male, Female, Prefer not to say</td>
</tr>
<tr>
<td>Age</td>
<td>0-10, 11-20, 21-30, 31-40, 41-50, 51-60, 61-70, 71-80, 81-90, 91-100, Prefer not to say</td>
</tr>
<tr>
<td>Institution</td>
<td>Company A, Company B, Company C, Prefer not to say</td>
</tr>
<tr>
<td>Programme Area</td>
<td>Area 1, Area 2, Area 3, Prefer not to say</td>
</tr>
</tbody>
</table>
### Part 1 - General Information

Please fill in and select the information where appropriate.

L1. What are your roles in your Institute? 你做哪些工作？

<table>
<thead>
<tr>
<th></th>
<th>No (是)</th>
<th>Yes (否)</th>
</tr>
</thead>
<tbody>
<tr>
<td>a.</td>
<td>I teach classes of students (including student assessment). 教授各類學生課程。（含評估）</td>
<td></td>
</tr>
<tr>
<td>b.</td>
<td>I also write module syllabus. 我也會寫課程大綱。</td>
<td></td>
</tr>
<tr>
<td>c.</td>
<td>I am also a module coordinator. 我亦是課程協調員。</td>
<td></td>
</tr>
<tr>
<td>d.</td>
<td>I am also the programme coordinator. 我亦是課程協調員。</td>
<td></td>
</tr>
<tr>
<td>e.</td>
<td>I am also responsible for student-industrial attachment (IA)/work placement matters. 我亦負責學生的實習/實習事項。</td>
<td></td>
</tr>
</tbody>
</table>
Appendix IX: Online Questionnaire for Workplace Mentors

Website: https://vpetcity.vtc.edu.hk/qesssurvey/index.php/313469?lang=en
<table>
<thead>
<tr>
<th><strong>Gender</strong>: 性别</th>
</tr>
</thead>
<tbody>
<tr>
<td>Choose one of the following answers</td>
</tr>
<tr>
<td>Please choose...</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Age</strong>: 年龄</th>
</tr>
</thead>
<tbody>
<tr>
<td>Choose one of the following answers</td>
</tr>
<tr>
<td>Please choose...</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Organization</strong>: 集団</th>
</tr>
</thead>
<tbody>
<tr>
<td>Please fill out your organization’s full name</td>
</tr>
<tr>
<td>[Enter]</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Programme Area</strong>: 領域</th>
</tr>
</thead>
<tbody>
<tr>
<td>Choose one of the following answers</td>
</tr>
<tr>
<td>Please choose...</td>
</tr>
</tbody>
</table>
**A Cross-institutional Study of Vocational Education and Training (VET)**

_Students’ Learning Needs as well as Teachers and Workplace Mentors’ Teaching Practices

(For workplace mentor)_

Centre for Learning and Teaching | VTC

0% | 100%

**Part 1 - General Information**

**Please fill in and select the information where appropriate.**

### 1.1 What are your roles in your workplace? (工作場所的角色是什麼？)

<table>
<thead>
<tr>
<th></th>
<th>No</th>
<th>Yes</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. I provide mentorship to students in the workplace.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>b. I write workplace assessment report for students.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>c. I am the immediate supervisor of a group or groups of students.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>d. I am responsible for coordination work, and I liaise with the teacher.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Appendix X: A Ten-minute PowerPoint Briefing

QESS Project

Development of Effective Pedagogical Practices and a Cross-institutional Online Sharing Platform for Hong Kong’s Vocational Education and Training (VET)

This Project

A collaboration between
- the Vocational Training Council,
- the Open University of Hong Kong,

Objectives

1. Identify learning and teaching needs of VET in Hong Kong to generate innovative pedagogical practices;
2. Develop Teaching and Learning Packages (TLPs);
3. Establish an open online platform for knowledge exchange and sharing and;
4. Develop and deliver continuous professional development programmes for VET teachers and workplace mentors.

This Study

A Cross-institutional Study of Vocational Education and Training (VET) Students’ Learning Needs as well as Teachers and Workplace Mentors’ Teaching Practices

聯校職業培訓教育 - 創新學與教資源共享平台
How you can help
2. Participate in the focus group interview

If you would like to participate in the focus group interview, please leave us your contact information.

Name: __________________________
Programme: ______________________
Email: __________________________

Name of Institute: __________________
Faculty/Department: _______________
Programme: ______________________

Name of Workplace: ________________
Industry/Trade: ________________