



7TH SEAMEO CENTRES POLICY RESEARCH NETWORK (CPRN) SUMMIT 2024

EMBRACING INCLUSIVITY IN EDUCATION, SCIENCE AND CULTURE TOWARDS A FUTURE-READY SOUTHEAST ASIA

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Balai Khazanah Islam Sultan Haji Hassanal Bolkiah, Brunei Darussalam

EFFECTIVENESS OF DUAL TECHNICAL AND VOCATIONAL EDUCATION AND TRAINING PROGRAMME IMPLEMENTATION: HIGHER NATIONAL TECHNICAL EDUCATION CERTIFICATE IN CONSTRUCTION AND DRAUGHTING



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Background



Challenging to prepare Technical and Vocational Education and Training (TVET) students for the workforce under the rapidly changing job requirements (Grigg, 2018).



Students lack motivation, poor direction for their future, and lack hands-on/real-life experience in the relevant field.



Industrial Attachment (IA) provides students real-life experiences and heavily involve students in the learning process (Hasmori et al., 2015).



The Dual TVET programme: Higher National Technical Education Certificate (HNTec) in Construction and Draughting (HCAD) was formed with the collaboration between government regulators and the Institute of Brunei Technical Education (IBTE)



SEMESTER

SEMESTER

1

4 DAYS
Institution based

+

1 DAY
Industrial Attachment

SEMESTER

2

4 DAYS
Institution based

+

1 DAY
Industrial Attachment

SEMESTER

3

3 DAYS
Institution based

+

2 DAYS
Industrial Attachment

SEMESTER

4

3 DAYS
Institution based

+

2 DAYS
Industrial Attachment

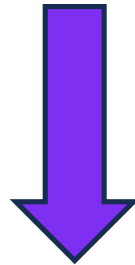
Brunei Darussalam Qualification Framework (BDQF)

| BDQF Levels | School Sector Qualifications | Technical and Vocational Education Sector Qualifications | Higher Education Sector Qualifications |
|-------------|--|---|--|
| 8 | | | <ul style="list-style-type: none"> • Doctoral Degree |
| 7 | | | <ul style="list-style-type: none"> • Master's Degree • Post Graduate Diploma • Post Graduate Certificate |
| 6 | | | <ul style="list-style-type: none"> • Bachelor's Degree |
| 5 | | <ul style="list-style-type: none"> • IBTE Brunei Maritime Academy (BMA) Diploma • <i>Advanced Diploma</i> • <i>Higher National Diploma (HND)</i> | <ul style="list-style-type: none"> • Foundation Degree • Advanced Diploma • Higher National Diploma (HND) |
| 4 | <ul style="list-style-type: none"> • GCE "A" Level • IGCSE "A" Level • IB Diploma • STPU |  <ul style="list-style-type: none"> • Higher National Technical Education Certificate (HNTec) • <i>BDTVEC Diploma</i> | |
| 3 | <ul style="list-style-type: none"> • GCE "O" Level (Grade A-C) • IGCSE and GCSE "O" Level (Grade A*-C) • SPU (Grade A-C) • BTEC Level 2 Diploma | <ul style="list-style-type: none"> • National Technical Education Certificate (NTec) • <i>Skills Certificate 3 (SC3)</i> | |
| 2 | <ul style="list-style-type: none"> • GCE "O" Level (Grade D-E) • IGCSE "O" Level (Grade D-E) • SPU (Grade D) • BTEC Level 2 Extended Certificate | <ul style="list-style-type: none"> • <i>Skills Certificate 2 (SC2)</i> • Industrial Skills Qualifications (ISQ) • Competency Proficiency Apprenticeship (COP) | |
| 1 | <ul style="list-style-type: none"> • BTEC Level Introductory Certificate | <ul style="list-style-type: none"> • <i>Skills Certificate 1 (SC1)</i> | |

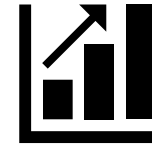
Rationale



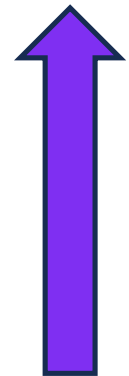
- HCAD created to find new ways to:
- tackle unemployment issues
 - provide better real-life experiences
 - Ensure early exposure to IA



- HCAD 1st intake was in July 2021
- 1st intake completed the HCAD programme in July 2023



Improvement to the HCAD programme



HCAD research commenced in July 2023

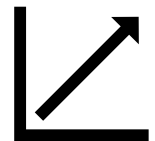
Objectives



To examine the effects of implementing the HCAD programme to improve students' learning experience

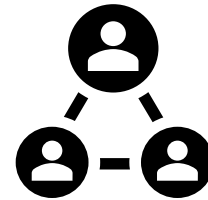


To investigate the students', staff and industry perceptions of their HCAD programme experiences



To investigate areas of improvement for the HCAD programme.

Research Questions



RQ1: What is the feedback from students, staff and industry from the programme?



RQ2: What are the students, staff and industry perception of the programme?

Methodology

Participants & Setting



- HCAD students
- Company supervisors (Industry)
- HCAD staff and teachers

Data Collection



Quantitative survey (Stage 1)

- 187 students (85% response)
- 21 staff (100% response)
- 36 industry (80% response)
- **Mean scores**

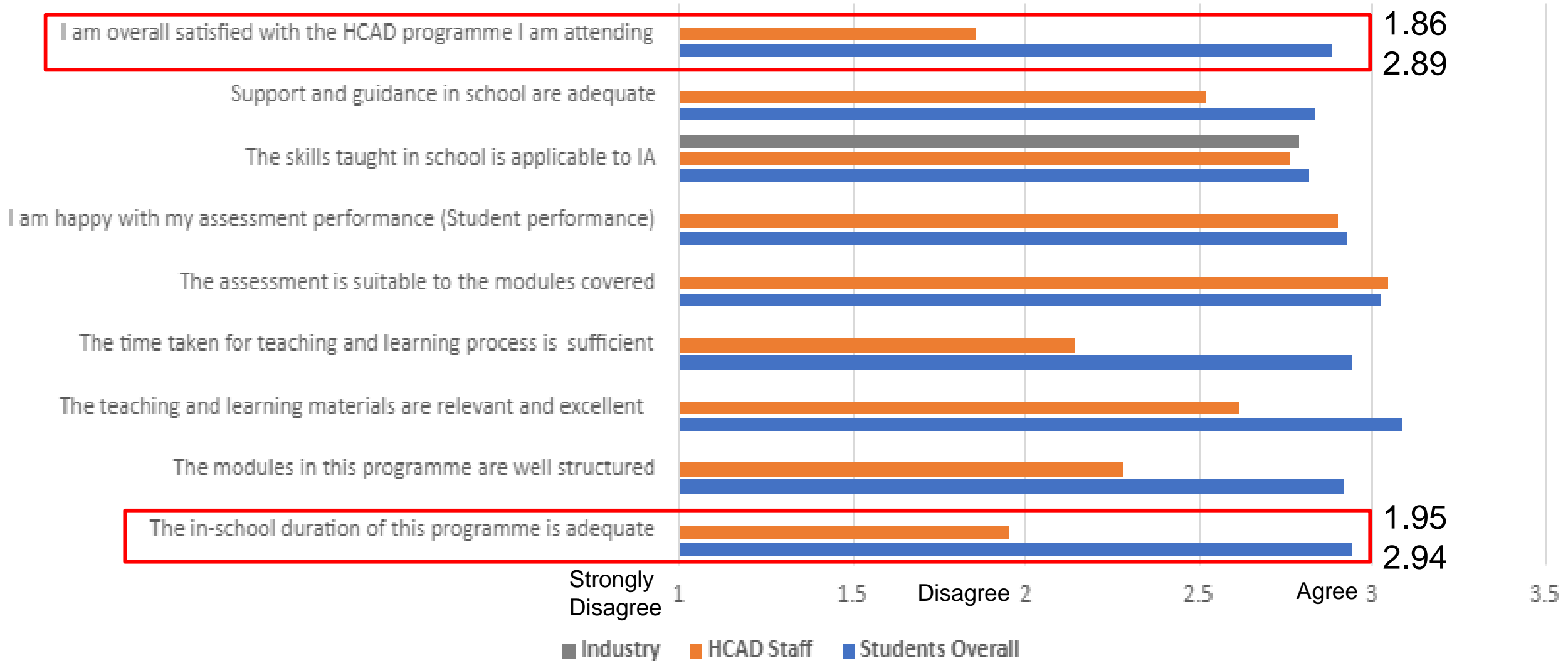


Qualitative interview (Stage 2)

- Positive, Middle & negative responses
- 30 students
- 6 staff
- 6 industry
- **Thematic analysis**

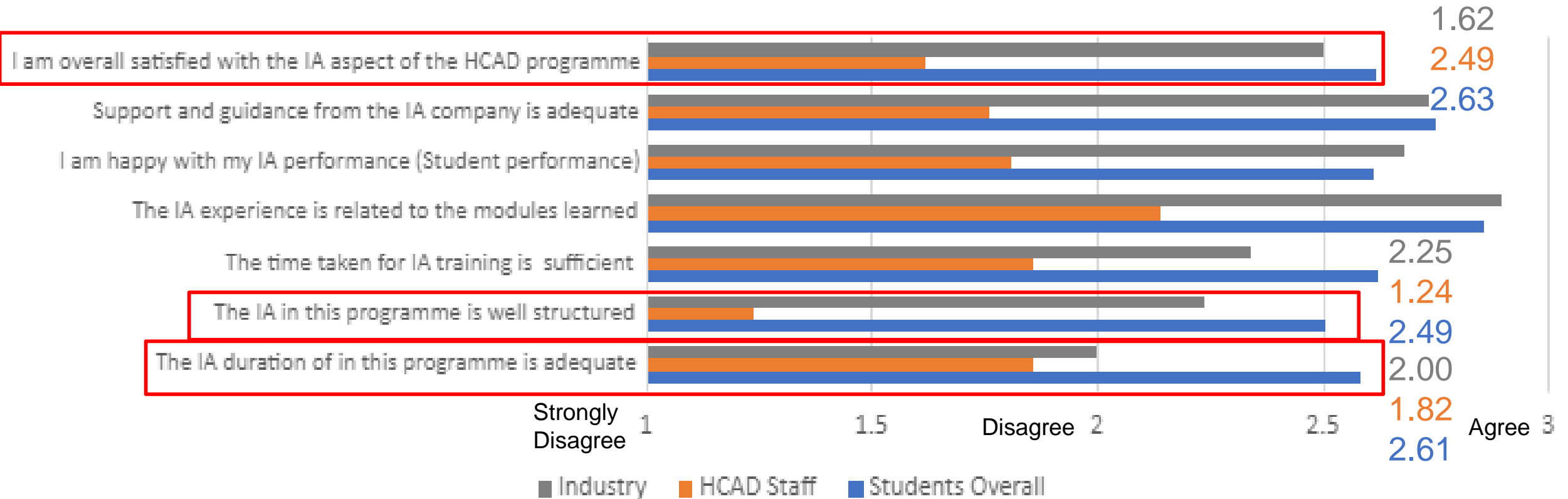
Discussion of Quantitative Findings

Institutional Based



Discussion of Quantitative Findings

Industrial Attachment Based



Discussion of Qualitative Findings





Positive experience

Align theory to practice
Develop skills



Negative feelings

Hectic (Balancing IA and school)
Heavy
Difficult/cannot focus learning
Complicated
Frustrated



Positive feelings

Okay
Good



Negative experience

Industry high commitment required
Inconvenient IA mode
Student unreadiness of IA
Irrelevant task allocation
Busy company supervisor
Unprepared industry
Students doing school work during IA
Lack of communication (School & industry)
Slow student learning progress



Suggestions of Improvement

Block/continuous IA

Curriculum update

Knowledge exposure before IA

Communication: School + Industry

Regular meeting: School + Industry

More committed companies



Block attachment

Boost student commitment/motivation

Better monitoring of IA

More efficient



Reasons not providing IA

Limited projects

Limited facilities

Too many attachment students

Expectation

Committed students

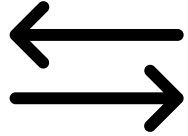
School to communicate everything to industry

Students to have basic construction skills at start of IA

Conclusion



Unfavourable feedback from students, industry & HCAD staff



Change Dual TVET system with major improvements (Based on study)



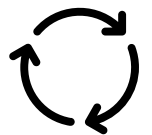
Enhanced engagement with all parties (institution, industry & government regulators) for way forward



Continuous monitoring and further research in due time for further feedback



Strengthen collaboration between the institution and government regulators



IA restructuring

- Students to be knowledgeable before starting IA
- Enhance the quality of students' IA experience

SEMESTER

(currently)

SEMESTER

1

4 DAYS
Institution based

+

1 DAY
Industrial Attachment

SEMESTER

2

4 DAYS
Institution based

+

1 DAY
Industrial Attachment

SEMESTER

3

3 DAYS
Institution based

+

2 DAYS
Industrial Attachment

SEMESTER

4

3 DAYS
Institution based

+

2 DAYS
Industrial Attachment

SEMESTER

(Synthesised findings)

SEMESTER

1

5 DAYS
Institution based

SEMESTER

2

5 DAYS
Institution based

SEMESTER

3

2 DAYS
Institution based
+
3 DAYS
Industrial Attachment

SEMESTER

4

2 DAYS
Institution based
+
3 DAYS
Industrial Attachment

"Learn from the past to
profit by the present,
Learn from the present to
live better in the future"

-William Wordsworth
English Poet

References

Grigg, N. S. (2018). Civil Engineering Workforce and Education: Twenty Years of Change. *Journal of Professional Issues in Engineering Education and Practice*, 144(4), 04018010.

Hasmori, A. A., Yunos, J. M., Hamzah, R., & Aripin, M. A. (2015). Revealed knowledge integration in National Dual Training System (NDTS): philosophy, issues, and challenges. *Procedia-Social and Behavioral Sciences*, 204, 191-197.

Thank you and Salaam Aidilfitri