

FIG Commission 2 – Professional Education (5/1/19)

Work Plan 2019 – 2022

1. Title

Commission 2 - Professional education

2. Terms of Reference

- Professional surveying education (vocational, higher and academic education) curriculum development.
- Professional surveying education (vocational, higher and academic education) learning and teaching methods and technologies
- The role of professional education and its relation to the public sector, private sector and professional organizations.
- The domain of professional surveying education (continuing professional development).
- Knowledge transfer in education and training, , and via existing academic networks.

3. Mission statement

Promote good practices in professional surveying education by:

- Exploring the needs of society and endorsing universities and other educational organizations to develop mechanisms and processes that will help to meet those needs.
- **Methods and content of education:** To support and promote advances in learning and teaching methods and content of curricula with special emphasis on the impact of technology and learning styles on education (outcome – report on state of education).
- **Knowledge sharing.** Promoting sharing of advances in professional education, research in surveying education and training and initiate joint projects (curriculum development, educational material development, joint courses, quality assurance etc.). Improving dissemination of information on educational theory and practice to the members across the world via existing academic networks. (outcome – special issue of journal, seminars/conferences).
- **Supporting capacity building** for surveying education in the developing world, through strengthening knowledge transfer (including collaboration with UN-GGIM, GLTN, RICS and

- academic networks). (outcome – regional knowledge sharing)
- **Cooperation with other professions.** Reinforcing cooperation with Educational Commissions of International Organisations on the related professions.
 - **Continuing Professional Development.** Encourage improved surveying practice through the promotion of continuing professional development (CPD) and the practical application of research, help surveyors continuously to update their academic and professional profiles.

Key priorities include becoming a more active Commission, a focus on worldwide professional education, supporting the education continuum in surveying education, and preparing land professionals for new challenges.

4. General

FIG Commission 2 is the domain of professional surveying education. The traditional core areas for the commission are: 1) curriculum and core surveying body of knowledge, 2) teaching and learning methodology, 3) marketing and management of professional education and 4) accreditation and quality assurance. During the 2011-2014 term Frank (2008, 2012) and Greenfeld (2010, 2012) centred on the understanding of the surveying core body of knowledge. Developments and discourse justified the broadening of the scope of FIG Commission 2 from surveying education to educating the land professional (Enemark & Williamson, 2004; Enemark, 2008, 2009, 2010; Magel et al. 2009; Mitchell & Enemark, 2008).

During the 2015 -2018, FIG Commission 2 built on the above work focusing on the following themes (i) *Becoming an active Commission*, (ii) *Professional education world-wide*, (iii) *the chain of professional surveying education*, and (iii) *towards educating the land professional*. A key publications from this term were Masum et al (2017) focusing on Bridging the Gap between Demand for and Supply of Professional Education, and Groenendijk (2017) reviewing the VGGTs in the curriculum¹ (next step in this research is to research the gaps in the implementation and adoption of the VGGTs in the curriculum).

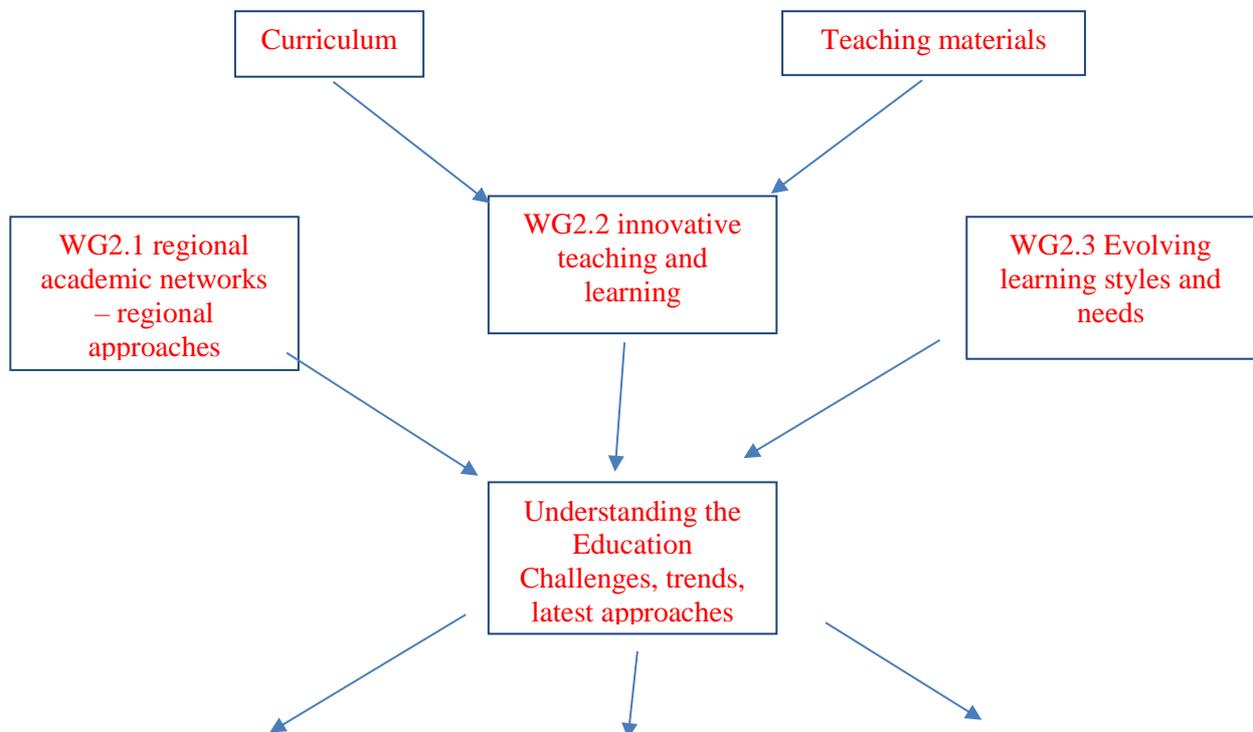
Innovative learning and teaching has always received major attention in FIG Commission 2. This is reflected in the work of Enemark (2004, 2007, 2009; Enemark & Gallant, 2012) promoting innovative teaching and learning approaches in surveying education, in particular project- and problem-based learning. E-learning, open learning and knowledge management achieved major attention by Markus (2005, 2008, and 2010). The work on e- learning resulted in the most recent publication by FIG Commission 2: FIG Publication No. 46. Enhancing Surveying Education through e-Learning. Markus (2010) mentioned the following two challenges for FIG Commission 2 that are still highly relevant to consider: ubiquitous learning and open education. For the new term these will be embraced and further explored.

¹ Case study approach where the members of the Academic Forum Working Group “Exploring the VGGTs in Practice” were invited to send a description of their education programs. A template was used to guide the case description. This paper concluded that many academic institutions have shown a keen interest in the VGGTs in its education scope and potential, and it can be used to reach each level of Blooms taxonomy to understand and question a range of land issues.

There has been a noticeable trend in recent years, particularly in English speaking countries, of a declining population of surveyors and the need to attract promising young surveyors into surveying (Frank, 2010). Various approaches and recruiting tools have been developed and shared during recent FIG Commission 2 events.

Developing educational and skills qualifications of surveying professionals and technicians is one of the other main concerns for FIG Commission 2. For some countries this is of more concern than others. In the United States ABET is used to allow standard recognition of educational surveying qualifications (Frank, 2007, 2009, 2010). In the United Kingdom, RICS has developed educational criteria that allow universities to assess the suitability of their curricula to the professional needs (Plimmer, 2003; Frank, 2010). With the rapidly changing surveying profession it is a continuous challenge to maintain a system of standardization. The former chair of FIG Commission 2 has worked intensively on defining educational surveying qualifications and in relation to the core surveying body of knowledge and learning and teaching methodologies (Frank, 2012).

For its new term, 2019 -2022, FIG Commission 2 will continue to build on the work carried out by the former commission chairs. FIG Commission 2 has developed for the term 2019 – 2022 the following focus areas. These will be discussed and worked out in concrete actions during the first Commission 2 meeting in 2019:



Report on Professional Surveying Education Challenges, trends, and latest approaches (methods and content of education)

Regional Capacity Development and Knowledge Sharing. Cooperation with other professions

Regional training and CPD

In addition to the specific activities above, Commission 2 will support and contribute to FIG Task Forces, Permanent Institutions and Networks, in particular to the Young Surveyors Network, the OICRF and the FIG Foundation.

5. Working groups

The work of FIG Commission 2 is organized in xx working groups. Each of the working groups represents an area of focus in professional surveying education. During the four-year term of office workshops at least one Commission 2 workshop will be organized. Ideally, each planned event will focus on one or more themes from a working group.

Working group 2.1 – Developing academic networks for knowledge sharing

Experience has shown that regional networks of academic institutions supports knowledge sharing in areas of education, research and capacity development.

Objectives

- To share knowledge and good practices in surveying curricula and programs across educational institutions and across countries – especially through existing and newly created academic networks.
- Contribute to the final Commission 2 report on professional education.
- To seek feedback from these academic networks on changes in curricula and approaches to professional education that respond to the changing nature of the surveying profession.
- To discuss and describe core competences (knowledge, skills and attitudes) for the education of future land surveyors and land professionals.
- Exploring the needs of society and endorsing universities and other educational organizations to develop mechanisms and processes that will help to meet those needs.
- **Knowledge sharing.** Promoting sharing of advances in professional education, research in surveying education and training and initiate joint projects (curriculum development, educational material development, joint courses, quality assurance etc.). Improving dissemination of information on educational theory and practice to the members across the world
- **Supporting capacity building** for surveying education in the developing world, through strengthening knowledge transfer (including with UN-GGIM, RICS and regional academic networks).
- **Cooperation with other professions.** Reinforcing cooperation with Educational Commissions

of International Organisations on the related professions.

Chair

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Co-chairs

TBA

Contributing partner – GLTN.

Specific projects

1. The University of Twente, Faculty ITC, has been actively involved in the initiation and strengthening such networks of academic institutions. Examples are the existing Eastern Africa Land Administration Network (EALAN), as well as lastly initiated Latin America Land Administration Network (LALAN). Within the framework of these networks, short courses, tailor made trainings, seminars and regional workshops are performed in order to strengthen education and build capacities required in particular region. During these activities, existing curricula are presented with aim to update and further develop the existing one, and this is a fruitful platform for new initiatives sharing and experience exchange.
2. Leveraging off these networks this WG can conduct a questionnaire of academic members in these networks to find out the regional perspectives of curriculum needs and teaching materials etc (supporting WG2.2). Perhaps also learning styles (supporting WG2.3)
3. Collaboration with the Training and Research Cluster of the Global Land Tool Network (GLTN) on a Knowledge Base on Responsible Land Administration. Involve FIG as a partner in the development, piloting and dissemination of the GLTN Knowledge Platform on Responsible Land Administration. Under this project 6 Modules have been developed to first draft stage and the focus in 2018 is on moving them towards online publication and freely available. FIG can add value and as a GLTN partner I am sure we can discuss adding the FIG badge to the output for example. We would work with GLTN to move this forward (Cluster co-chair Eugene Chigbu of TUM).
4. Possible engagement with: Diane Dumashi as overall chair of the FIG Regional Capacity Development Network, Jennifer Whittal is the incoming chair of the FIG Africa Regional Network and is developing a Network of Academic Institutions in all of Africa, Robert Sarib for Asia/Pacific, as well as Eugene Chigbu (Co-lead of GLTN Training and Research Cluster). There is a strong opportunity to coordinate the activities of Commission 2 working Group 2.1, FIG Africa Regional Network, EALAN, NELGA, and the GLTN rollout of the Responsible Land Administration Knowledge Base.

The working group will further be involved in developing initiatives to support professional

education at other levels than the academic education, such as the level of polytechnics and vocational training institutions.

Strengthening knowledge management and organizational learning in FIG and its members will be a theme for this working group. The use of OICRF, Surveying Reference Library and Surveying Education database, as a knowledge and learning platform for FIG will be explored and further developed. This will be done together with the responsible members and the FIG Secretariat. The new FIG website is an important factor in this initiative.

Workshop

- Developing Academic Networks Workshop within FIG 2020; in Amsterdam the Netherlands.
- Similar workshop during the FIG Working Week in 2021.
- The final report presented and discussed at the Congress in 2022.

Publication(s)

- Contribute a chapter on the role of regional academic networks to the Commission 2 report on surveying education.
- Developing Latin America Land Administration Network (LALAN); for FIG 2019 (or FIG 2020)

Time table

☐ The report is the major output of this working group and will be a 4-year project.

Beneficiaries

☐ Higher education institutions, national associations, governments, international governing bodies, cadaster and land registration organizations; chartered surveyors, private surveyors and FIG Corporate Members.

Working Group 2.2 – Innovative learning and teaching / "Curriculum on the Move"

Extend the work done by Commission 2 in the previous term which focused on Europe. This align with aspects highlighted in Masum et al (2017) "Enhancing the Role of Surveyors: Bridging the Gap Between Demand for and Supply of Professional Education". the working group completed a draft by December 2017, with key papers published in a peer reviewed journal late 2018.

Objectives

- To exchange and promote good practices in teaching and learning methodologies in professional education of the surveying and land professional. The aim is to capture the very best teaching that our members are doing and not currently writing about.
- increase our understanding of the challenges and trends and innovation in professional education.
- Contribute to the final Commission 2 report on professional education.
- Exploring the needs of society and endorsing universities and other educational organizations to develop mechanisms and processes that will help to meet those needs.

- **Methods and content of education:** To support and promote advances in learning and teaching methods and content of curricula with special emphasis on the impact of technology and learning styles on education.
- **Knowledge sharing.** Promoting sharing of advances in professional education, research in surveying education and training and initiate joint projects (curriculum development, educational material development, joint courses, quality assurance etc.). Improving dissemination of information on educational theory and practice to the members across the world.
- **Continuing Professional Development.** Encourage improved surveying practice through the promotion of continuing professional development (CPD) and the practical application of research, help surveyors continuously to update their academic and professional profiles.

Chair

Mohsen Kalantari (Australia) (mohsen.kalantari@unimelb.edu.au)

Co-chairs TBC...

Other members - William Kelly (University of Glasgow)
Contributing partner – UN-GGIM Academic Network.

Specific projects

This working group will encourage members to publish and present on innovative learning, teaching and technology (both as used in industry and as used in education) applied to Surveying and Geomatics education. This includes, but is not limited to, student online peer assessments, rubrics, inter-grader reliability in marking of practical projects, personal reflective diaries, and development of 'graduate attributes' in surveying students.

FIG Commission 2 intends to support the FIG Council in designing dynamic technical sessions, use of innovative ways of reporting, organising challenging workshops and promote the online involvement and participation. This should be achieved by working together with Young Surveyors Network and the FIG Secretariat.

Workshop

Workshops during the FIG Working Weeks in 2019, 2020 and 2021.

The final report presented and discussed at the Congress in 2022.

Publication(s)

☐ Contribute chapters on surveying education trends and challenges to the Commission 2 report on surveying education.

☐ Other specific conference papers and journal papers arising from the work of this working group.

Time table

☐ The report is the major output of this working group and will be a 4-year project.

Beneficiaries

Higher education institutions, surveying professionals, Young Surveyors and potential surveyors, FIG Office and Secretariat and FIG Members; FIG Corporate Members; public in general (open access).

Working Group 2.3 – Joint Commission 2/YSN working group - Learning styles in surveying² education

Objectives

- To survey, analyse and document the learning styles of students at different ages (including young surveyors) and from different regions.
- increase our understanding of the varied ways that surveying students learn.
- Contribute to the final Commission 2 report on education.
- Exploring the needs of society and endorsing universities and other educational organizations to develop mechanisms and processes that will help to meet those needs.
- **Methods and content of education:** To support and promote advances in learning and teaching methods and content of curricula with special emphasis on the impact of technology and learning styles on education.
- **Knowledge sharing.** Promoting sharing of advances in professional education, research in surveying education and training and initiate joint projects (curriculum development, educational material development, joint courses, quality assurance etc.). Improving dissemination of information on educational theory and practice to the members across the world.

Chairs

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Special projects

This working group will work with the Commission 2 chair and vice chair, and YSN chair to design and implement a survey/questionnaire of their members on student learning preferences. A key focus in the first year will be designing the questions and then implementing the questionnaire in

² The term surveying includes all the roles of a surveyor listed under the FIG definition of a surveyor and the professional disciplines included under the FIG commissions. This includes programs and courses that focus on areas including surveying, geomatics, cartography, land administration and management, real estate, geodesy, property, planning.

as many regions as practical.

The questions to be asked will be carefully selected to explore a range of aspects of how people of different ages and from different regions learn. This could include study habits (increasingly online/YouTube?), the style of learning (cramming at the end/regular?), what teaching and classroom approaches were effective (blended learning, PBL, active learning), how they learn new technology, how teaching and learning technology is used and helpful for learning.

The working group will seek support from FIG to send to FIG academic members, and of the FIG regional networks and Working Group 2.1 to distribute to regional networks. This will take the scope beyond a focus on young surveyors.

Support will be needed for the data analysis of the questionnaire results. Commission 2 and the YSN will apply to the FIG Foundation to provide support for the data analysis of the questionnaire results. After the FIG Council meeting this week I will work with Melissa to make an application to the FIG Foundation for funding.

The results of the questionnaire will be supplemented by discussion at workshops, including at the events below. This increased understanding and questionnaire results and analysis will inform publications during the 4-year term, and the final Commission 2 report on education.

Workshop

Workshops during the FIG Working Week in Hanoi in April 2019, and South East Asian Survey Congress in Darwin in August 2019.

Interim results presented at Working Weeks in 2020 and 2021, and the final report presented at the Congress in 2022.

Publication(s)

- ☐ Contribute a chapter on student learning styles to the Commission 2 report on surveying education.
- ☐ Other specific conference papers and journal papers arising from the work of this working group.

Time table

- ☐ The report is the major output of this working group and will be a 4-year project.

Beneficiaries

Individuals, potential surveyors, higher education institutions, vocational schools, society, labor market, public and private sector; FIG's corporate members; young surveyors and potential surveyors.

6. Academic Forum

The Academic Forum is the platform for FIG Academic Members. Traditionally Commission 2 has a leading role in the Academic Forum. During the FIG Congress 2014 in Kuala Lumpur the Forum discussed

and prepared an initial statement on Academic responsibilities and the Voluntary Guidelines on the Responsible Governance of Tenure (VGGT). Further Academic Forums were held at subsequent FIG Working Weeks and the 2018 Istanbul Congress. For its new term, FIG Commission 2 will continue to play an instrumental part in the Academic Forum and working with the Council to explore partnership with FAO and FIG Academic Partnership program.

During the 2019 Working Week, Commission 2 will contribute to one of two joint FIG/FAO sessions with core emphasis on progress in supporting the application of the Guidelines, including FAO selected invitees as presenters of related experiences:

- i. FAO/FIG Academic Forum - Progress in supporting the application of the Guidelines, and opportunities to engage regional, sub-regional, academic and young surveyors’ networks

7. Relation to other Commissions and Task Forces

By its nature FIG Commission 2, Professional Education, has a relation to all the other technical commissions as is illustrated in figure 1. However, with some commissions it has a stronger relation than with others.

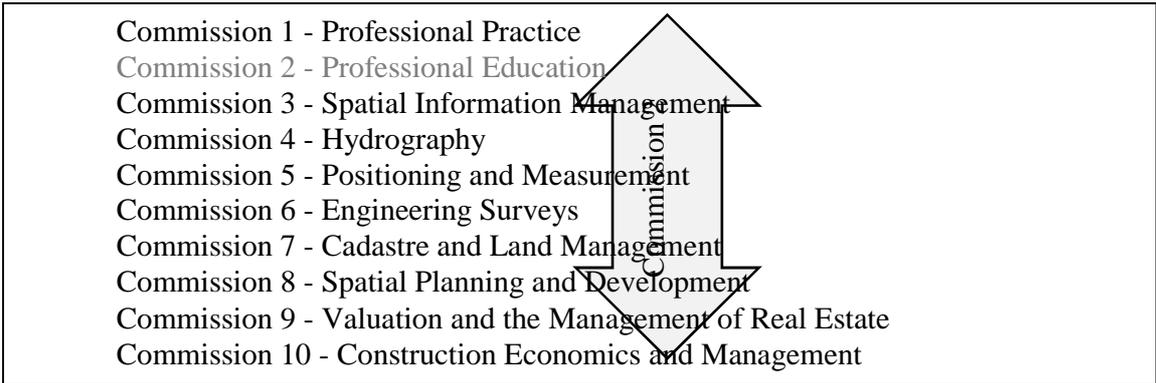


Figure 1. The position and function of FIG Commission 2 in relation to the other Commissions.

Commission 2 works closely together with Commission 1 and in particular with Working Group 1.1 - Changing Nature of Work and the Role of a Surveyor.

Commission 2 has a close connection to Commission 7 Cadastre and Land Management. The changing nature of the surveyor or land professional is best illustrated by the trends and developments in cadaster and land management.

FIG Commission 2 has a role in supporting the Young Surveyors Network, some of FIG Task Forces like Africa Task Force and the OICRF (The International Office for Cadastre and Land Records) (OICRF).

Traditionally the chair of FIG Commission 2 is a member of the FIG Foundation.

8. Continuous Commission activities

- LinkedIn Group: <http://www.fig.net/commission2/index.htm>
- Newsletter
- FIG Surveying Education database: need for member to work on it!!
- Stimulate young surveyors involvement
- Improved communication and online involvement
- Engage with corporate members/associations/UN Bodies/WB/FAO
- Increase global reach and new membership.

9. Commission Officers

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