Maritime education and training: IAMU and IMO- Formal research of main concepts and trends

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Abstract

This research is devoted to a formal joint intratext analysis of the papers submitted to IAMU 8th Annual General Assembly (AGA 8) under the title "World Maritime Excellence," and materials submitted to IMO STW 38/39 sub-committee sessions, the basic theme of which was "Comprehensive review of the STCW Convention and the STCW Code". The main links and gaps of basic concepts extracted from two sets of papers were defined.

1 Introduction

The main objective of this paper was to analyze the actual and most vital subjects discussed by universities during the AGA8 Assembly and compare them with the main items which were considered by IMO's STW 38/39 subcommittee sessions. In principle, a degree of conformity was obtained. This information can be used for understanding whether institutions feel and follow the requests of industry and vice versa – how industry influences the MET institutions' core activities. To evaluate links and collaboration we used those publications and working materials available in electronic format. The total amount of researched material was 432 AGA 8 pages (Odessa 2007) and more than 1,500 STW 38/39 pages (IMO 2007-2008).

To reach the stated objective of our research, we used the Leximancer software. Leximancer is a data-mining tool that can be used to analyze the content of collections of textual documents, and visually to display the extracted information. A large amount of textual information cannot be read and analyzed without specialized software, which is why we used Leximancer.

"Concepts" in Leximancer are collections of words that "travel together" throughout the text. So, in this paper, "concepts" are sets of associated words that are extracted automatically by the system. Researchers can also interact

with this process, creating concepts that are of interest to them (Leximancer Manual 2002).

2   IAMU AGA 8 and IMO STW 38/39

It is clear that the closest relations of IAMU MET logically should be with the STW subcommittee of the IMO. This closeness of subject areas can be measured by textual materials presented by the organizations from its conferences.

Let us assume that the level of importance of any concept which can be mined from the text is equal to the frequency of its recurrence in the text. The importance of components (attributes) included into a concept can also be defined by their conditional frequencies (probabilities) using the Leximancer software. So, the more frequently the concept occurs in the text, the more important it is considered to be.

Leximancer software extracted the main concepts considered during IAMU AGA 8 (AGA 8 2007) and also from materials of STW 38 (2007) and STW 39 (2008). Fig.1 shows these main concepts discussed by the two organizations.
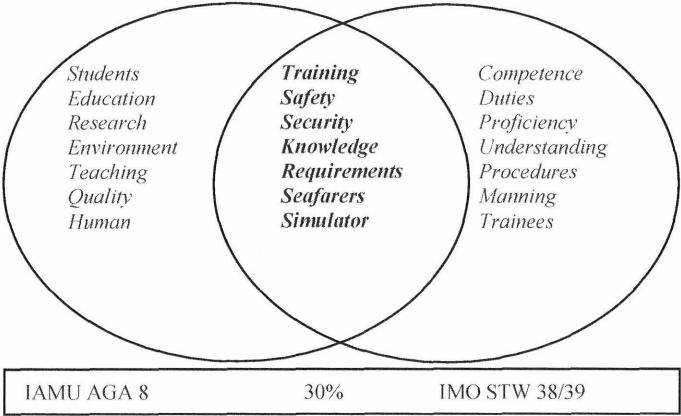

Fig.1. Main concepts as per IAMU AGA 8 *Proceedings* and IMO STW 38/39 materials

We observe that 30% of concepts were considered as common ones. In other words, both sides paid great attention to *training,* but for example, *manning* was not interesting to the IAMU, and *education* was not a hot topic for STW 38/39.

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Fig.2 (a, b) shows the uniting of concepts into themes. For AGA 8, two main themes were *training* and *safety*. For STW 38/39 the main themes were *manning* and *safety*. It can also be seen that intersection areas are rather small. This indicates that, in principle, the themes were discussed in both organizations almost independently; this can hardly be considered a correct procedure.

Fig. 3 shows the conditional probabilities (relative importance) of components used in the deliberation of three main concepts: *safety, security* and *knowledge*. In other words, we can see the importance of main concepts determined by participants of two conferences. The intratext information mined from set of texts is as follows:

Safety: As per STW documents, the most important components in the concept *safety* were *training* and *requirements,* but *teaching* and *research* were not mentioned in principle. AGA8 papers recognize that the most important components of the concept *safety* are *understanding* and *security*. *Training* is not used in this context at all.
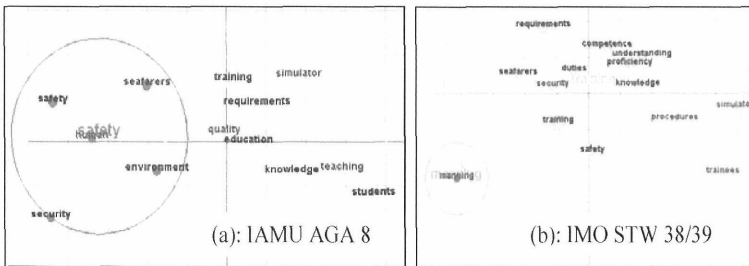

Fig.2: Concepts related to themes: (a) *training* and *safety* (IAMU), (b) *training* and *manning* (IMO)

Security: The STW version of the concept points out that *training, duties* and *requirements* were the most important components but *education* and *research* were beyond their consideration. AGA 8 papers show that there was a poor link with *safety* and *training* . It is rather strange but there was no logical connection of the concept *security* with *duties, competence* or *manning* at all.
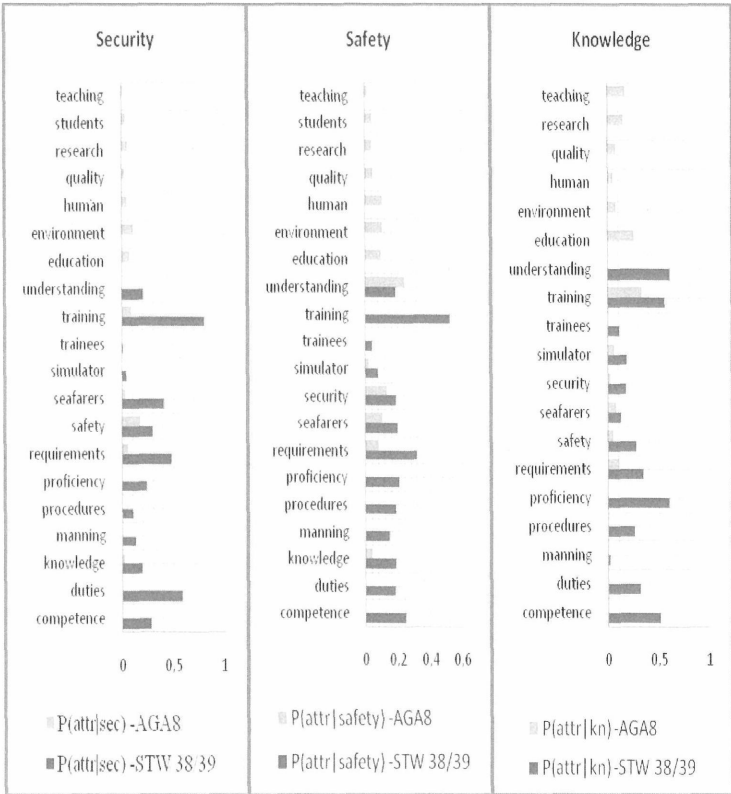
Fig.3: Components of the concepts *safety, security,* and *knowledge* and their relative importance

Knowledge: In the STW version of this concept, the terms *understanding, training, proficiency* and *competence* are the most important components. In the IMO, this discussion went within the framework of the STCW Code, which is why these terms are not correlated with *research, teaching* and *education*.

As per AGA 8 the version, the concept of *knowledge* is significantly linked with *education* and *training*. This is quite natural. But the absence of any connections with *understanding ,proficiency* and *competence* can be considered as a negative.

3   Conclusion

The preliminary formal analysis of texts facilitates analytics to find implicit, intratext, and logical   connections between main concepts to improve their deliberation during conferences and to develop research tasks. For example, by

the materials processed (fig.3), the following research projects might be considered as logically vital and important for industry:

(a) *Training* techniques for improving *safety* at sea (How to train better?)
(b) A comprehensive review of conflicts between the concepts *safety* and *security* in the ISM /ISPS codes.
(c) Research into, and development of, an optimum *knowledge/training* ratio for seafarers.

References

[1]   Leximancer Manual, Version 2.2, 2005.

[2]   World Maritime Excellence . Proceedings of the 8th Annual General Assembly and Conference of IAMU, ONMA, Odessa, Ukraine, 17-19 September 2007

[3]   STW 38 working materials , IMO , London, 2007.

[4]   STW 39 working materials , IMO , London, 2008.