

**Proformance Plus webinar
INNOVATIVE TEACHING AND LEARNING**

Avoiding Collisions at Sea Course

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Sveučilište u Rijeci, Pomorski fakultet



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University of Rijeka, Faculty of Maritime Studies

ABOUT ACTs PROJECT

Funding: EU – **Transfer of Innovation**

Duration: 2013 – 2015

No. of Partners: 6

Leading Partner: Faculty of Maritime Studies Rijeka

Name	Country
Faculty of Maritime Studies Rijeka	Croatia
Centre For Factories of the Future	UK
Piri Reis University	Turkey
Spinaker, d.o.o.	Slovenia
Nikola Vaptsarov Naval Academy	Bulgaria
Sea Teach S.L.	Spain

Challenge/problem - objective

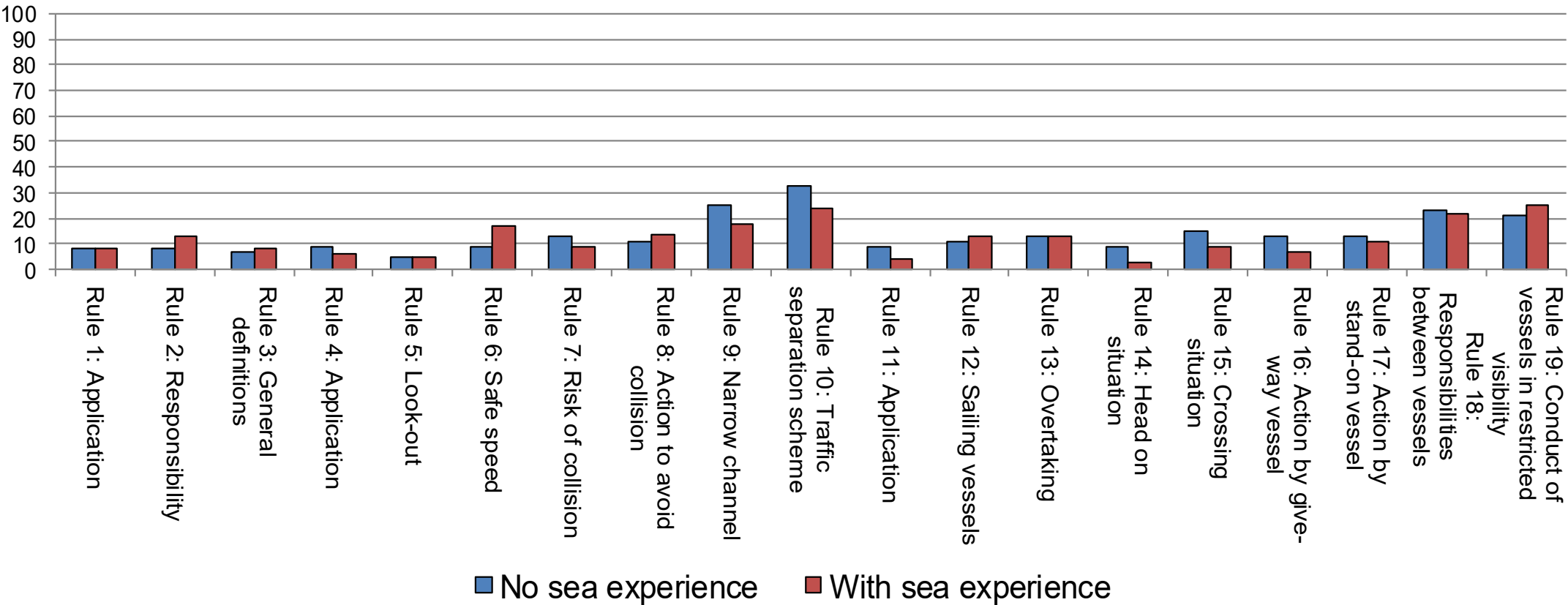
Based on a literature and questionnaire research, there is **a strong need for a new methods of learning and explanations of COLREGs:**

1. Need to interpret the existing rules precisely so that they are understood in the same way by everyone concerned.
2. The rules that give priority to others have to be clear such that they are applied consistently.
3. A common understanding of each rule is needed – standardizing the education, training and assessment of COLREGs.
4. **An e-course would help to complement the use of expensive ship simulators.**
5. **To improve learning methodologies use of real life study scenarios for each rule and visual images, simulators, CADs and 3D dynamic animations could be beneficial.**
6. Need for official translation of COLREGs in multiple languages.



Methodology of implementation - RESULTS OF THE RESEARCH

Which rules are hardest to understand



RESEARCH RESULTS & CONCLUSIONS

- Questions for maritime education and training lecturers show **that over 63 % percent of students have problem in interpretation of the Rules.**
- Some questions have answers accuracy of 50 % and some 70-80 % as the upper limit.
Is that acceptable?
With what percentage of correct answers we can be satisfied?
- This research clearly showed that **curent method of learning COLREGs-a and teaching materials are not suficient enough** and that the **development of new methods and methodologies is needed for a better understanding of the Rules.**

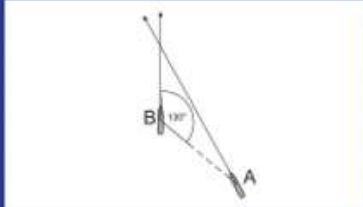


Technology, tools used - eCOLREGs scenarios

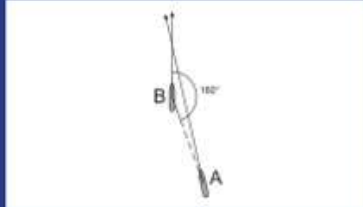
More scenarios for each Rule

Scenarios for Rule 13 (Overtaking)

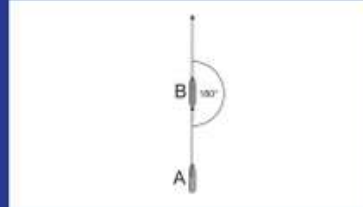
Relative bearing of overtaking vessel is STBD 130°



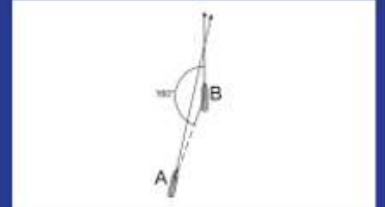
Relative bearing of overtaking vessel is STBD 160°



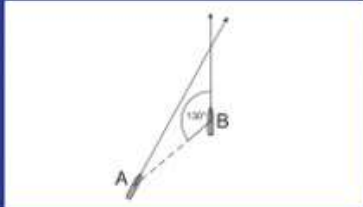
Relative bearing of overtaking vessel is 180°



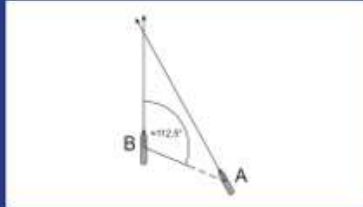
Relative bearing of overtaking vessel is PORT 160°



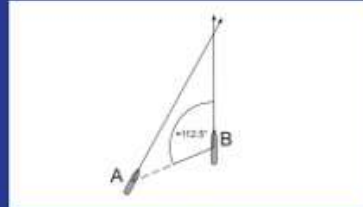
Relative bearing of overtaking vessel is PORT 130°



Relative bearing of overtaking vessel is close to STBD 112.5°



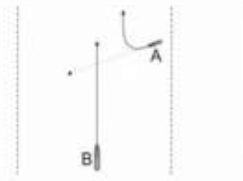
Relative bearing of overtaking vessel is close to PORT 112.5°



eCOLREGs scenarios

- ▶ Title
- ▶ Image
- ▶ Description of scenario
- ▶ Rule(s) to be applied
- ▶ Applying the Rule(s) and comments
- ▶ Videos (Bird's-eye, Bridge, Radar screen and/or ECDIS view)

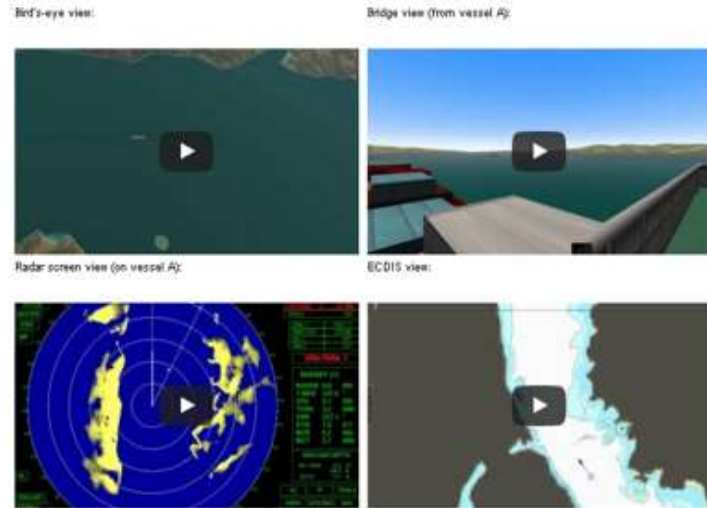
A vessel of less than 20 m in length sailing in a narrow channel or fairway



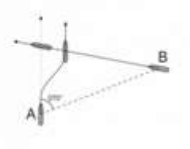
Description of scenario: Vessel A: vessel of less than 20 m in length
Vessel B: power-driven vessel which can safely navigate only within a narrow channel or fairway
Area: Narrow channel
Vessel A and vessel B are crossing so as to involve risk of collision.

Rule(s) to be applied: Rule 9 (Narrow channels)

Applying the Rule(s) and comments: In accordance with Rule 9 (b) (Narrow channels), a vessel of less than 20 m in length (vessel A) shall not impede the passage of a vessel which can safely navigate only within a narrow channel or fairway (vessel B).



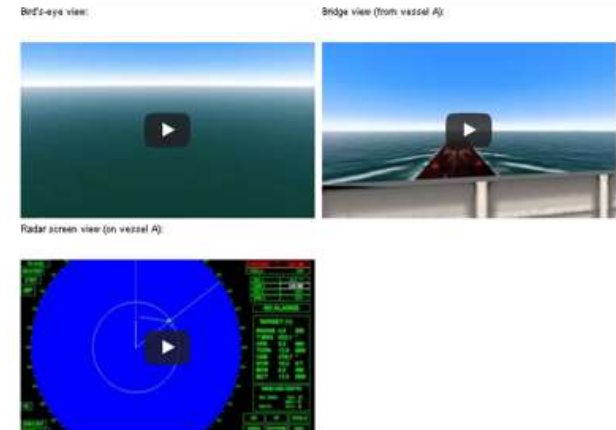
Crossing situation (relative bearing STBD 070°) - altering course to starboard



Description of scenario: Vessel A: power-driven vessel
Vessel B: power-driven vessel
Area: On the high seas
Mobility: Good (Vessels in sight of one another)
Vessel A has vessel B on her own starboard side (relative bearing STBD 070°)
Vessel A and vessel B are crossing so as to involve risk of collision
Vessel A is altering course to starboard to avoid collision with vessel B

Rule(s) to be applied: Rule 15 (Crossing situation)
Rule 16 (Action by give-way vessel)

Applying the Rule(s) and comments: In accordance with Rule 15 (Crossing situation), when two power-driven vessels are crossing so as to involve risk of collision, the vessel (vessel A) which has the other (vessel B) on her own starboard side shall keep out of the way.
In accordance with Rule 16 (Crossing situation), vessel A shall, if the circumstances of the case admit, avoid crossing ahead of vessel B.
In accordance with Rule 16 (Action by give-way vessel), every vessel (vessel A) which is directed to keep out of the way of another vessel (vessel B) shall, so far as possible, take early and substantial action to keep well clear.



eCOLREGs scenarios

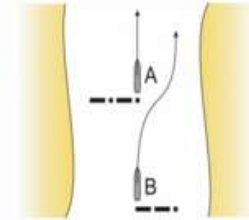
A power-driven vessel over 50 m underway - lights



Description of scenario:	Type of vessel: Power-driven vessel of more than 50 m in length underway Time of the day: From sunset to sunrise and from sunrise to sunset in restricted visibility
Rule(s) to be applied:	Rule 23 (Power-driven vessels underway)
Applying the Rule(s) and comments:	In accordance with Rule 23 (a) (Power-driven vessels underway), a power-driven vessel underway , shall exhibit: (i) a masthead light forward; (ii) a second masthead light abaft of and higher than the forward one; (iii) sidelights ; (iv) a sternlight .



Sound signals in narrow channel or fairway to indicate intention to overtake another vessel on her starboard side



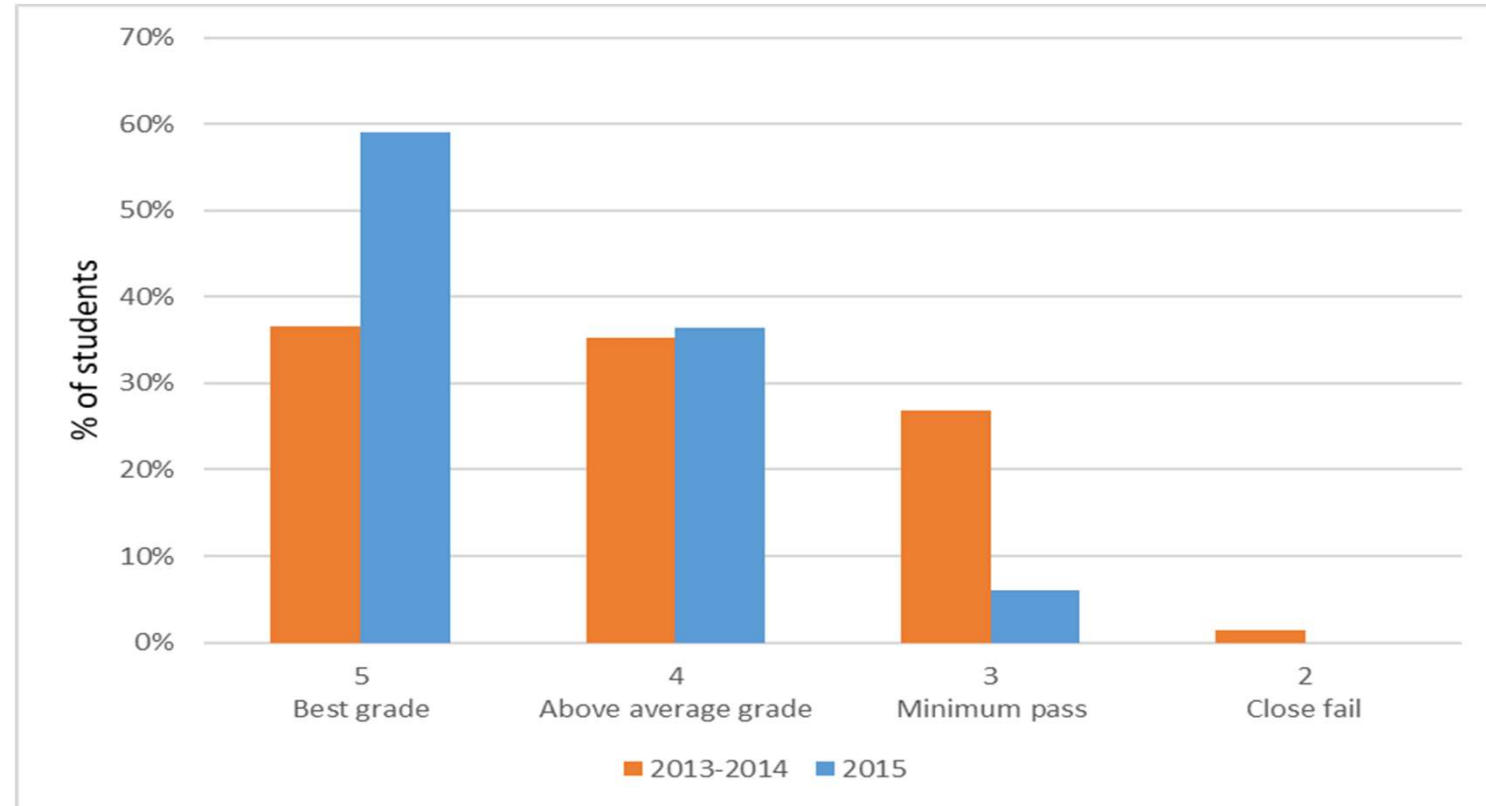
Description of scenario:	Vessel A: Vessel about to be overtaken Vessel B: Vessel intending to overtake another vessel Area: Narrow channel of fairway Vessels are in sight of one another
Rule(s) to be applied:	Rule 34 (Manoeuvring and warning signals) Rule 9 (Narrow Channels)
Applying the Rule(s) and comments:	In accordance with Rule 34 (c)(i) (Manoeuvring and warning signals), when in sight of one another in a narrow channel or fairway a vessel intending to overtake (vessel B) another vessel (vessel A) on her starboard side shall in compliance with Rule 9 (e)(i) (Narrow Channels) indicate her intention by two prolonged blasts followed by one short blast on her whistle . In accordance with Rule 34 (c)(i) (Manoeuvring and warning signals), the vessel about to be overtaken (vessel A) when acting in accordance with Rule 9 (e)(i) (Narrow Channels) shall indicate her agreement by one prolonged, one short, one prolonged and one short blast on her whistle , in that order. In accordance with Rule 34 (f) (Manoeuvring and warning signals), if whistles are fitted on a vessel at a distance apart of more than 100 m, one whistle only shall be used for giving manoeuvring and warning signals.
Signals:	Sound signal of a vessel intending to overtake another vessel on her starboard side

Outputs/ Outcomes/Impacts – COLREGs exam results

In 2015 e-COLREGs course has been introduced to students of Faculty of Maritime Studies Rijeka.

From 2013-2015
150 students undergo the
oral examination of
COLREGs.

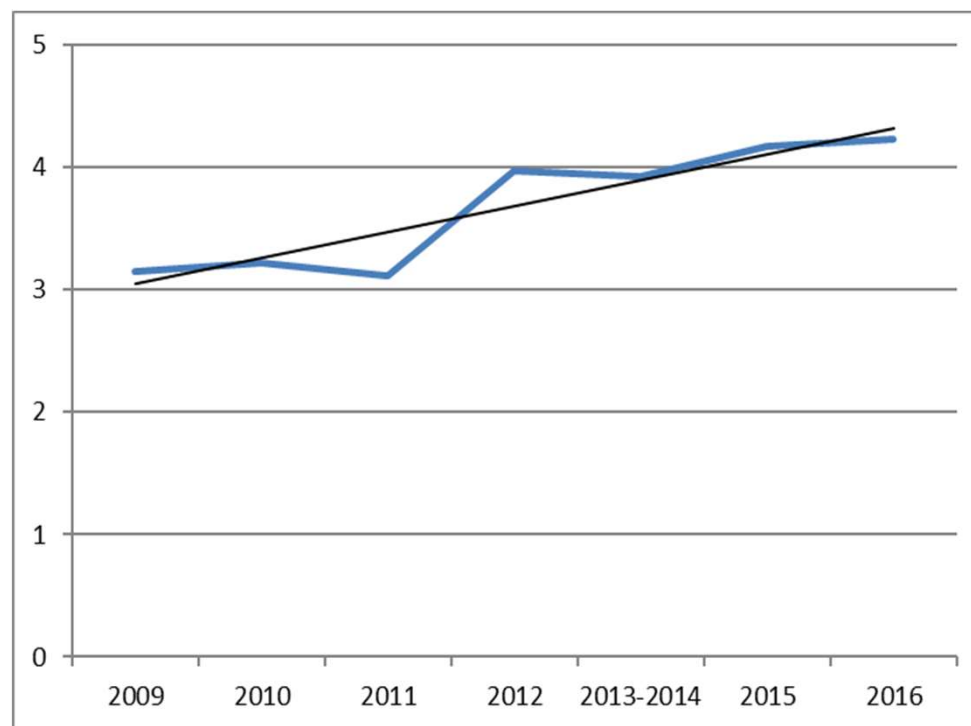
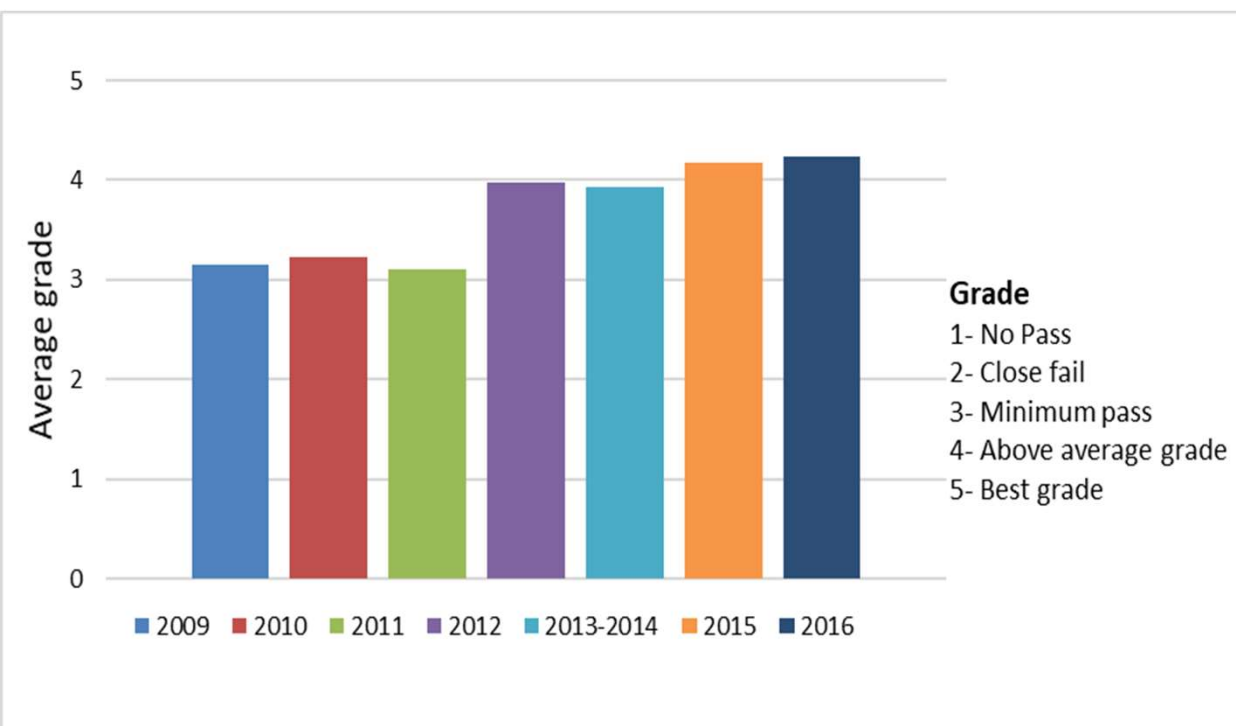
The statistics show
increase of 23% of students
with the best final score
and reduction of minimum
knowledge for 25 %.



This is evidence that course helps students in learning and understanding COLREGs.

COLREGs exam results

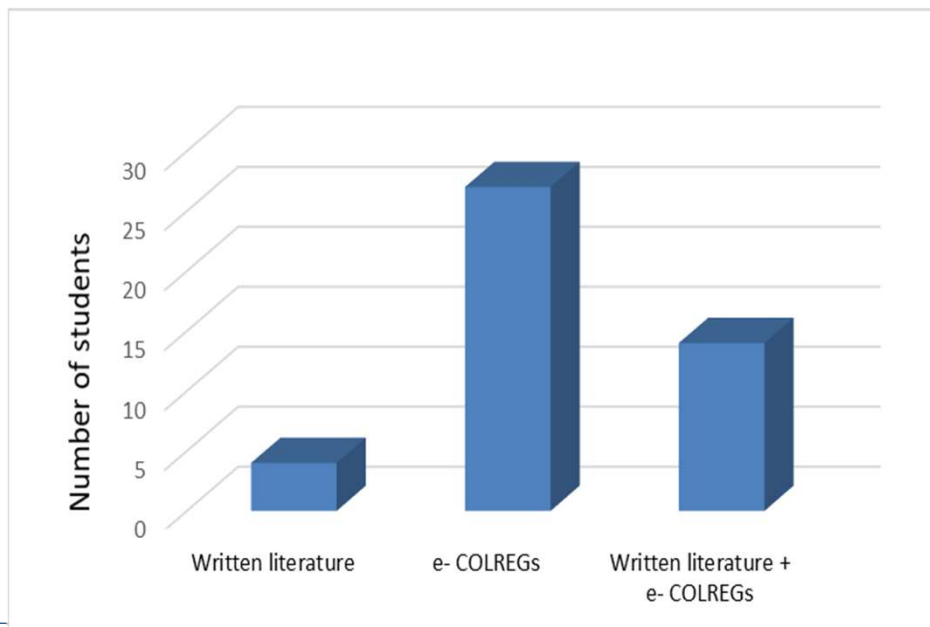
Comparisation of final exam results in COLREGs from 2009 – 2016 (students from Faculty of Maritime Studies Rijeka)



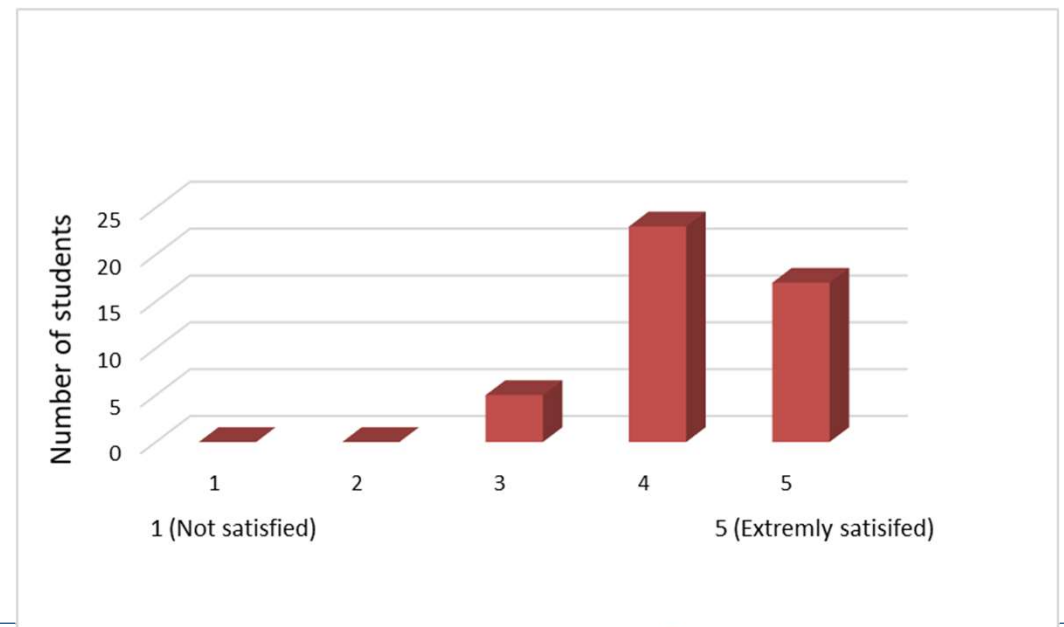
eCOLREGs evaluation

Research undertaken by BSc student Lora Legac among Nautical department students (45) on PFRI (2017)

Which learning material You use for learning COLREGs?

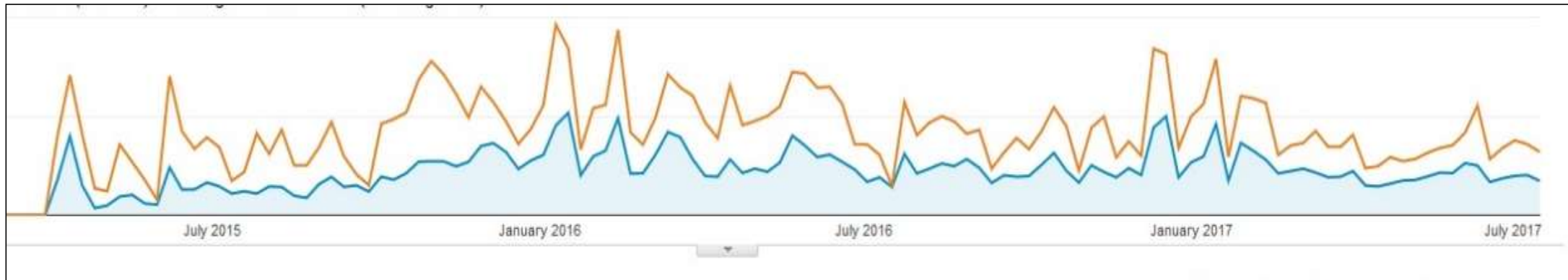


How much are You satisfy with e-COLREGs learning platform?



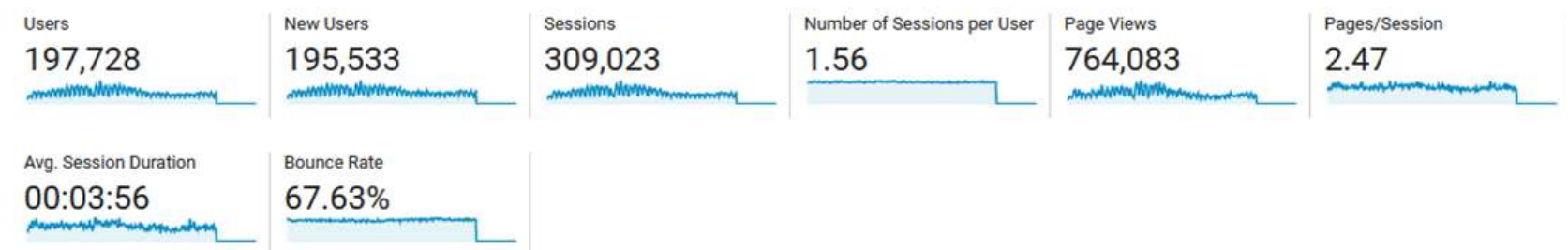
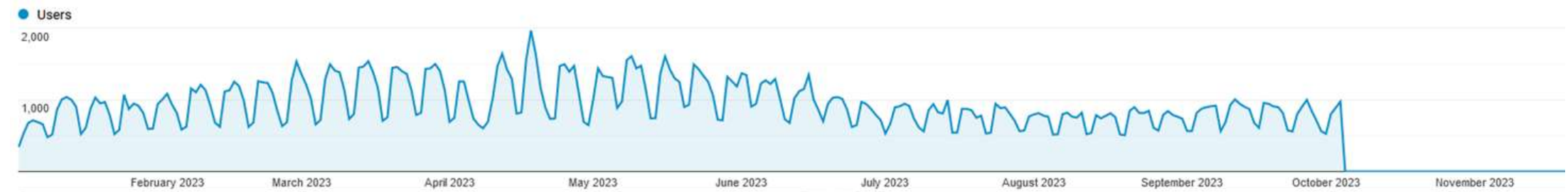
International recognition of eCOLREGs platform from 2015 till 2017

Number of user on www.ecolregs.com: from end of 2015 till September 2017 – more than 400,000

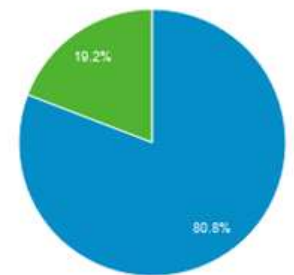


1. Philipines 15%
2. UK 9%
3. Turkey 7%
4. Croatia 6 %
5. USA 6%
6. India 5%
7. Bulgaria 4%
8. Australia 3%
9. Singapore 3%
10. Ukraine 2%

International recognition of eCOLREGs platform for first 10 months of 2023



■ New Visitor ■ Returning Visitor



Country	Users	% Users
1. 🇵🇭 Philippines	53,084	26.50%
2. 🇮🇳 India	20,191	10.08%
3. 🇺🇸 United States	17,932	8.95%
4. 🇹🇷 Türkiye	12,314	6.15%
5. 🇬🇧 United Kingdom	12,055	6.02%
6. 🇪🇸 Spain	7,187	3.59%
7. 🇦🇺 Australia	5,484	2.74%
8. 🇨🇦 Canada	4,612	2.30%
9. 🇸🇬 Singapore	4,214	2.10%
10. 🇳🇱 Netherlands	3,946	1.97%

More informations, please visit:

www.ecolregs.com
and
advanced.ecolregs.com



With Knowledge We Sail the World

Thank you for your attention



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