

# How to use the National Student Survey (responsibly)

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1. Background
2. 'Rule of Eye'
3. 3 ways of using confidence intervals

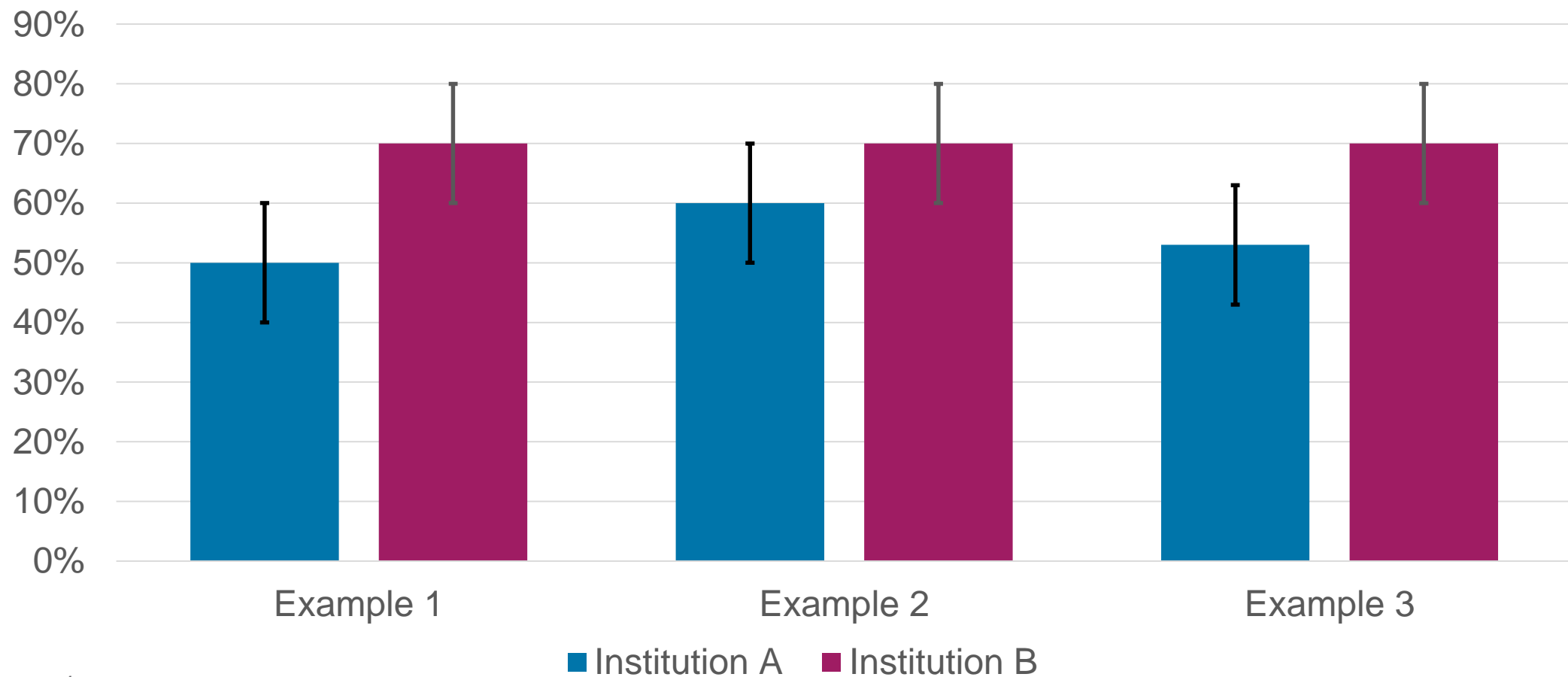
“Another common concern is that...administrators might believe that **means can be interpreted to the third decimal, that all fluctuations up and down are interpretable trends, or that means falling below a specific standard are always indications of poor teaching.**” (Boysen et al 2014)

“Over-interpretation of small differences in student evaluations **is a problem among teachers,** and no evidence in the current research indicates that **statistical knowledge prevents such misinterpretations.**” (Boysen 2017)

“[A]t the university level, there are relatively few universities that differ significantly from the mean across all universities and, at the course level, there is even a smaller portion of differences that are statistically significant. This suggests the inappropriateness of these ratings for the construction of league tables... When results of the NSS are presented or used for any of their intended purposes, this **substantial error variance identified here should be emphasised appropriately.** Thus, for example, error bars (or confidence intervals)...would make clear that differences between individual universities are mostly unreliable.” (Cheng and Marsh 2010)

Rule of Eye: A difference is statistically significant ( $p < 0.05$ ) when the overlap of the 95% confidence intervals is no more than about half the average margin of error. (Cumming and Finch 2005)

“easily remembered, pragmatically useful guidance for anyone inspecting a figure that presents data” (Cumming 2009)



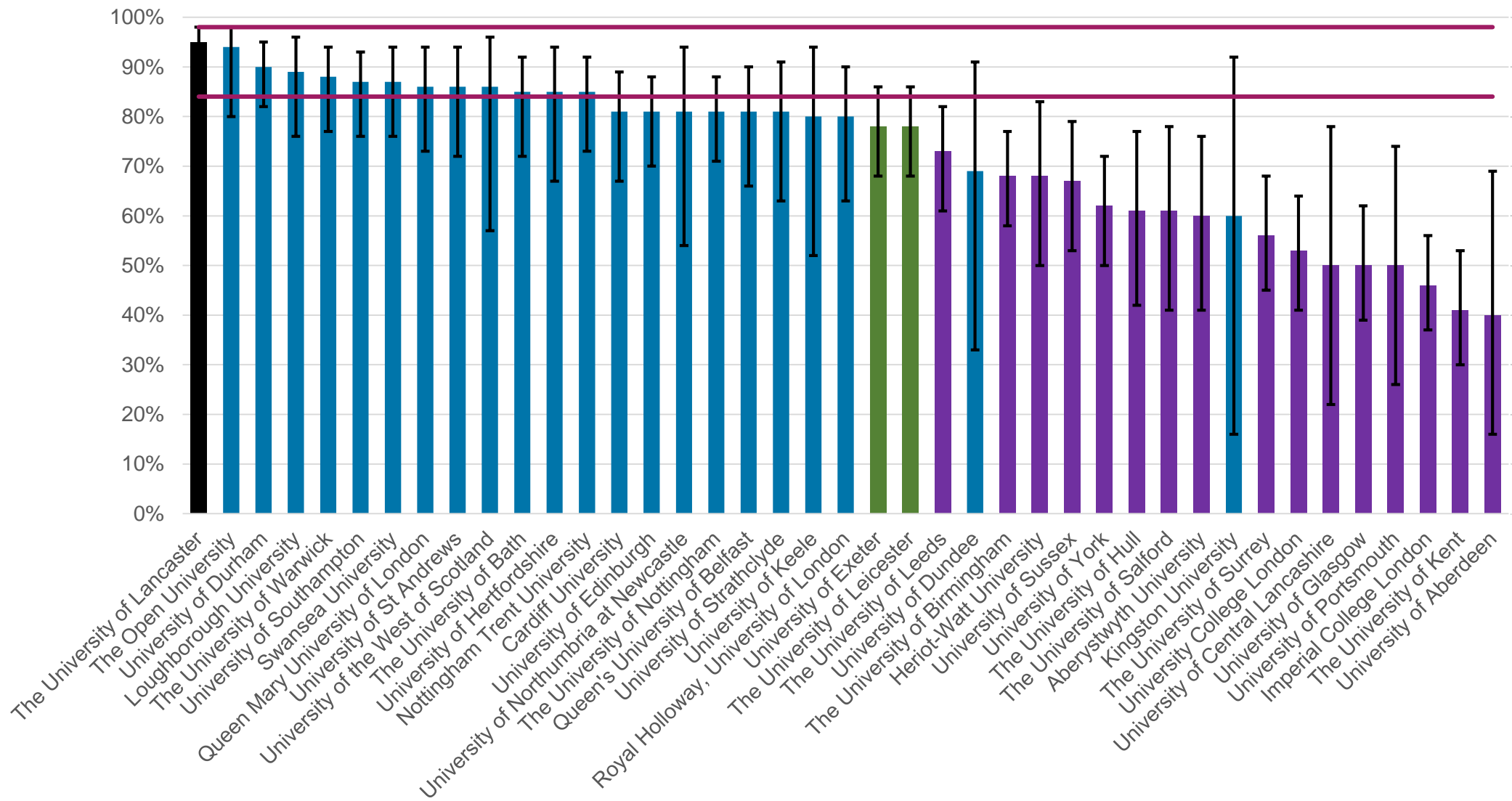
**Table C1: Proportion of confidence interval overlaps across different subject groups**

NSS level 1 subject code	NSS level 1 subject name	HC = 10, RR=50%	HC = 23, RR=50%
1	Medicine and dentistry	73%	72%
2	Subjects allied to medicine	92%	88%
3	Biological sciences	95%	94%
4	Veterinary science	97%	97%
5	Agriculture and related subjects	96%	93%
6	Physical sciences	97%	96%
7	Mathematical sciences	96%	94%
8	Computer science	91%	89%
9	Engineering and technology	93%	89%
	Architecture, building and		

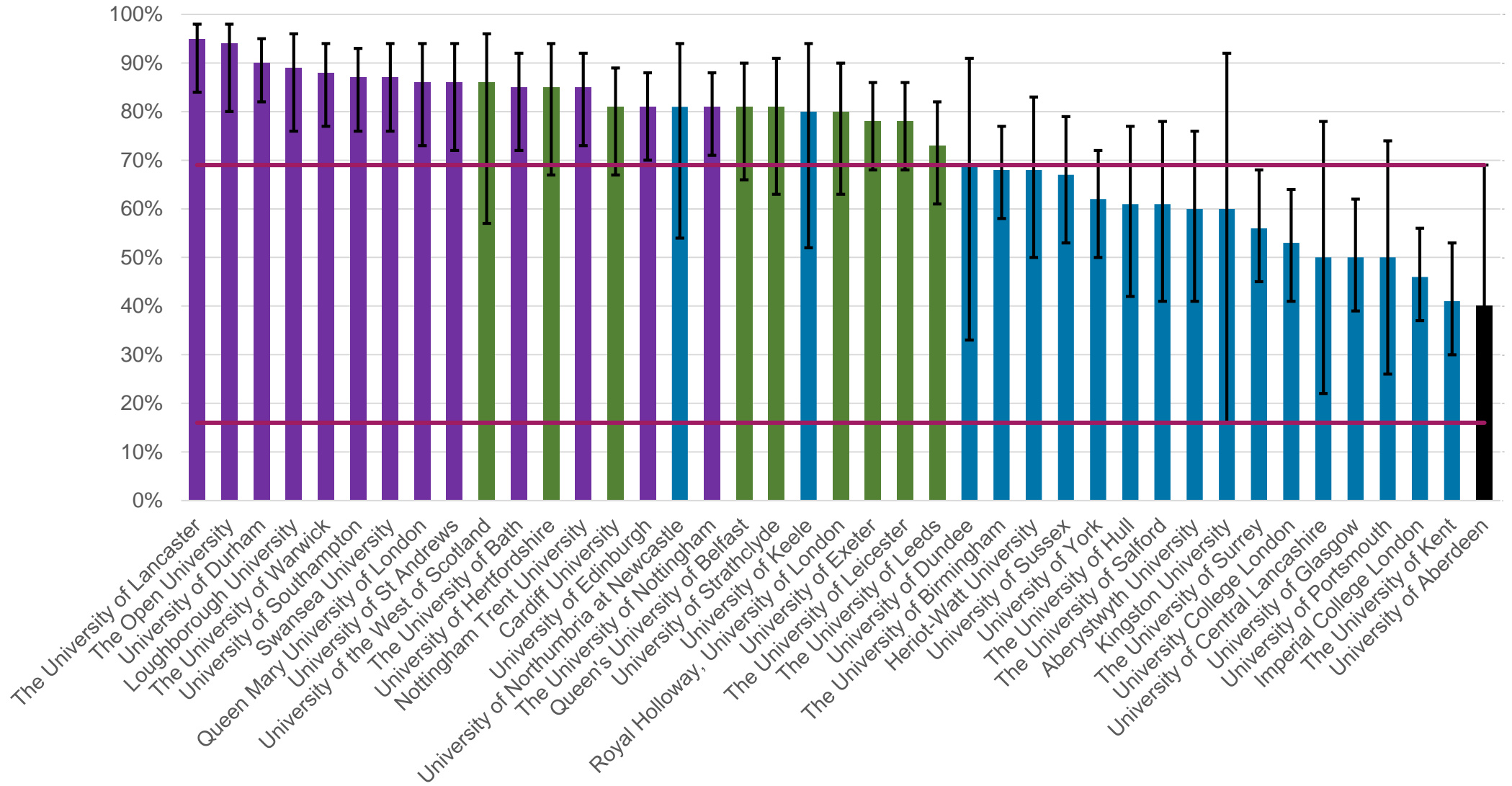
HEFCE (2014)

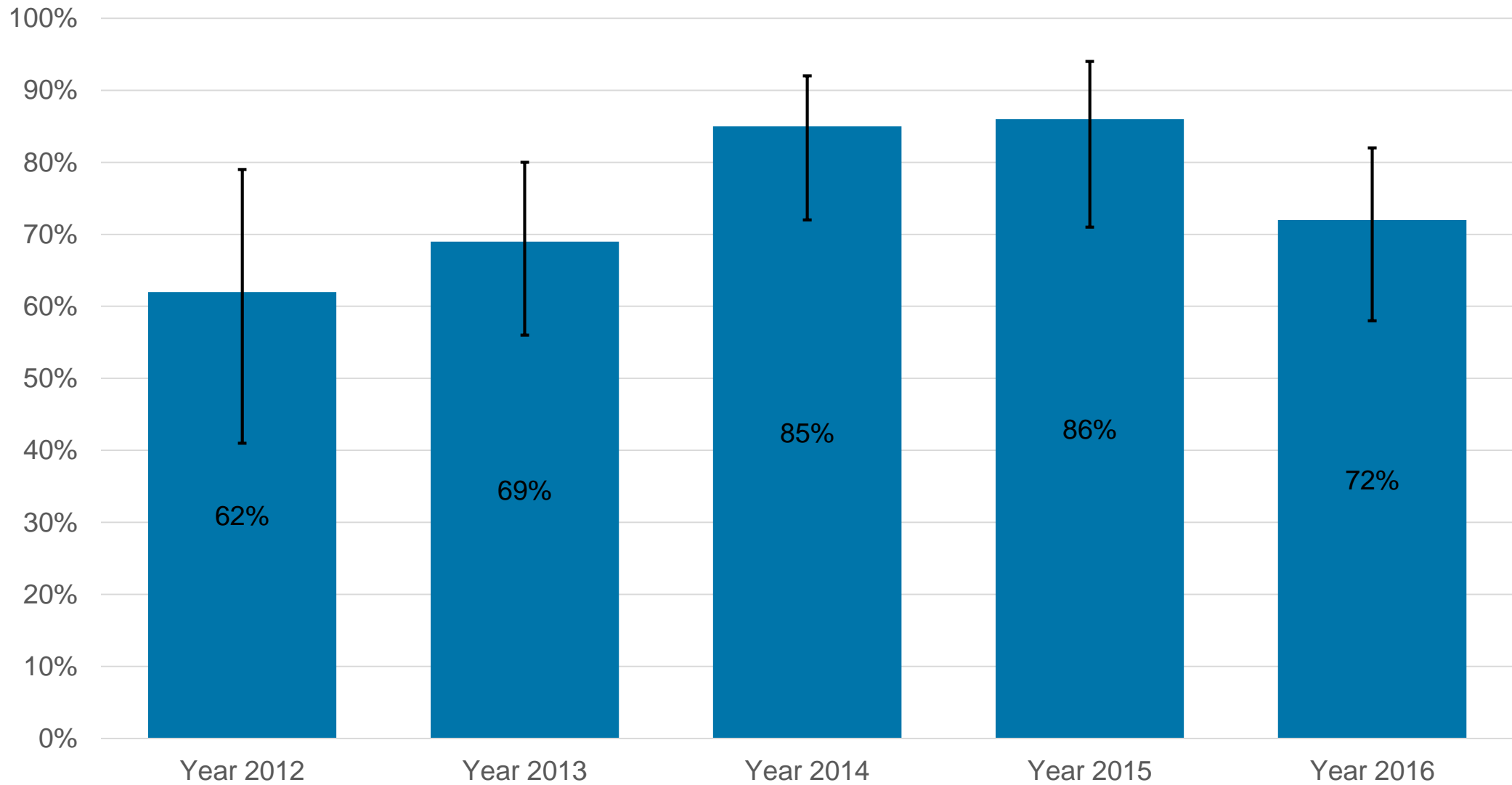
Institution	Subject	Question number	Confidence interval – min	Actual value	Confidence interval – max	Response
Anglia Ruskin University	(098) Drama	Q01	81%	93%	98%	62

<https://www.officeforstudents.org.uk/advice-and-guidance/student-information-and-data/national-student-survey-nss/get-the-nss-data/>









Subject	Q01	Q02	Q03	Q04	Q05	Q06	Q07	Q08	Q09	Q10	Q11	Q12	Q13	Q14	Q15	Q16	Q17	Q18	Q19	Q20	Q21	Q22	Q23	Q24	Q25	Q26	Q27	
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Subj27										Red				Red												Red	Red	
Subj28																												

Subject	Q01	Q02	Q03	Q04	Q05	Q06	Q07	Q08	Q09	Q10	Q11	Q12	Q13	Q14	Q15	Q16	Q17	Q18	Q19	Q20	Q21	Q22	Q23	Q24	Q25	Q26	Q27	
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Subj28		Red		Red				Red	Red						Red		Red				Red	Red		Red	Red	Red	
Subj29																		Red									

“Making changes based on invalid interpretations of student evaluations could result in wasted effort or declines in instructional quality if perfectly functional aspects of pedagogy are altered unnecessarily.”  
(Boysen 2017)

## References

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