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INTEGRATION OF 21ST CENTURY SKILLS INTO THE BHUTANESE CURRICULUM

Kinley Seden
Bhoj Raj Rai
Phuntsho Norbu
Dorji Dema
Bishnu Bhakta Mishra

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ABOUT THE LEARNING CYCLE ON INTEGRATION OF 21ST CENTURY SKILLS IN CURRICULUM

From June 14 to July 9, and August 16 to September 9 the KIX EAP Hub, in partnership with the Australian Council for Educational Research (ACER), delivered two rounds of a four-week course to strengthen the link between policy and implementation regarding 21st century skills. 34 participants in 7 country teams participated in the first round of the course and 35 participants in 7 country teams participated in the second round of the course. The course addressed the steps required and the challenges faced by policy makers to implement systematic curriculum reform that further emphasizes 21st century skills within learning outcomes and ensures these are connected to relevant assessment measures and pedagogical strategies.

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KIX EAP Hub / NORRAG
20, Rue Rothschild
P.O. Box 1672 1211 Geneva 1 Switzerland
norrag.kix@graduateinstitute.ch

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A BIOGRAPHICAL NOTE ON THE AUTHORS

Kinley Seden is a lecturer at the Department of Social Science, Samtse College of Education, the Royal University of Bhutan. She holds a PhD in Education from Masaryk University, the Czech Republic and Evtos Lorand University, Hungary. She also holds an M.A in Economic Studies from the University of New England, Australia. Throughout her professional career, she has been active in teaching both undergraduate and postgraduate students. She is also a researcher and has publications in national and international journals. Her research interests include psychology of teaching learning and assessment practices, gender and education, teacher education, and professional development.

Bhoj Raj Rai is working as a Curriculum Specialist with the Department of Curriculum and Professional Development, Ministry of Education, Royal Government of Bhutan. He is also the head of the STEM Division under the same department. Prior to this role, he worked as a chemistry teacher for nine years at Drukgyel Higher Secondary School. He was also the Principal of Kuengaa Higher Secondary School for five years. He has served as the Chief of the Primary Curriculum Division under the Department of Curriculum Research and Development, Ministry of Education, and as the head of the STEM Unit with the Royal Education Council. His area of specialisation is chemistry education and science education in general. Apart from Science education, he is also trained in developing curriculum for children with special needs and in Place Based Education. He was instrumental in bringing science curriculum reform in Bhutan and contributed as one of the writers in developing the Science Curriculum Framework for Bhutan and other Teaching Learning Materials for PP to XII Science curriculum. He has contributed as a writer in developing Place Based Education Student's Self-Instructional Guide in Science and in developing training modules for Science Laboratory Assistants of Bhutan. He has also reviewed the M.Ed Science module for Samtse College of Education and Paro College of Education and served as external examiner for Royal University of Bhutan. At present he is a taskforce member of Transitioning to Bhutan Baccalaureate and the taskforce member for Higher Education Reform for Bhutan. Currently he is also working on the National School Competency based Curriculum for Chemistry which is to be implemented in all the schools in Bhutan in the academic year 2022.

Phuntsho Norbu has been working as a Curriculum Developer in Physics for the last four years, researching, reviewing, and developing curriculum in Physics from grade IX to XII. Prior to that, he worked as a teacher for 13 years and taught physics for grade IX and XII students and Chemistry for grade IX and X students. He also did an advanced certificate in Environmental Management and Sustainable Development from India. After obtaining his advanced certificate, he taught Environmental Science to students in grades IX and XII. Phuntsho Norbu is a recipient of the prestigious AusAid Scholarship and did his master's degree in applied physics from Curtin University, Australia. He holds a bachelor's degree in secondary science, physics and chemistry from Samtse College of Education in Bhutan. As a teacher, he contributed to the development of children in all areas of development and was recognized as an excellent teacher in 2017. As a curriculum developer, Phuntsho Nobru has been constantly researching and reviewing the physics curriculum. The main highlight of his contribution as a curriculum developer is the development of a National School Curriculum in Physics and an Instructional Guide in physics. These constitute a competence-based curriculum aimed at providing an uninterrupted curriculum in all situations. Space science and technology have been integrated into the physics curriculum as one of the most important reforms. He attended classrooms and online workshops on the integration of cross-cutting skills and 21st century skills into the curriculum.

Dorji Dema is currently working as an Examinations and Assessment Officer with Bhutan Council for School Examinations and Assessment (BCSEA) under School Examination Division. In her capacity as Examinations and Assessment Officer, she coordinates and ensures that the quality and standards of Technical and Vocational Education and Training (TVET) test instruments are developed as required by the Ministry of Labour and Human Resource for the national level assessment of students across middle secondary and higher secondary schools, and vocational training institutes in Bhutan. Prior to joining BCSEA, she served as a

teacher for 11 years in middle secondary schools during which she taught biology and chemistry, TVET and Agriculture and Food Security curricula (AgFS). In addition to overseeing the assessment of TVET subject, she also contributes to other areas of

assessment by working in close collaboration with other divisions and agencies. She was not only instrumental in the refinement and finalization of the contextual questionnaires, her service in the administration of the historic National Education Assessment in Bhutan was indispensable. Her contributions towards developing Standard Operating Procedures (SOP) and orienting Examination Supervisors and Invigilators remotely for the seamless conduct of national examinations amid the outbreak of COVID-19 and national lockdowns are commendable.

Bishnu Bhakta Mishra has been working as an Education Officer for the last 14 years, managing Quality Inclusive Education Programmes and Projects. Prior to that, he worked in JICA Bhutan as a Technical Officer, in which he championed the Technical and Vocational Education and Training (TVET) programme. Bishnu was a high school teacher for ten years (1993-2003) where he not only taught English and Economics to children of higher secondary level, but also headed Professional Development Committee. He received a rare citation from the school and district authorities in 2004 for his outstanding contributions towards the excellence of Drukgyel Higher Secondary. As Education Officer, Bishnu has contributed to instituting Child Friendly School policies, Educating for Gross National Happiness, and Education in Emergencies into the education system. Bishnu's expertise and passions lies in Disability Inclusive Education. Major studies that he has contributed to are: Evaluation of Non-Formal Education in Bhutan (2009), Assessment of Educating for Gross National Happiness (2014), Knowledge, Attitude and Practices (KAP) Study on Children with Disabilities (2017-18) and currently the Evaluation of Inclusive and Special Education in Bhutan. Bishnu was instrumental in instituting Bhutan Professional Standards for Teachers into Bhutan's education system, aligning it with the National Civil Service performance. Through a Global Partnership for Education (GPE) project, he has contributed to the development of Bhutan's first ever inclusive National Education Assessment Framework. During COVID-19 School closures, Bishnu co-led the development of Education in Emergencies that is being implemented as the New Normal (National School) Curriculum in the country. He believes that quality of education is a direct function of teacher capacity, but with systems thinking in education and a synchronized approach to curriculum, pedagogy and assessment, education quality can be significantly uplifted.

CONTENTS

Figures

LIST OF ACRONYMS AND ABBREVIATIONS

21CS	21st Century Skills
BCSEA	Bhutan Council for School Examinations and Assessment
CBAF	Competency Based Assessment Framework
CBQ	Competency Based Questions
DCPD	Department of Curriculum and Professional Development
GNH	Gross National Happiness
NEAF	National Education Assessment Framework
NEA	National Education Assessment
NNC	New Normal Curriculum
NSCF	National School Curriculum Framework
PCE	Paro College of Education
PgDE	Postgraduate Diploma in Education
RUB	Royal University of Bhutan
SCE	Samste College of Education
TSPD	Teacher Professional Support Division
TVET	Technical Vocational Education and Training

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EXECUTIVE SUMMARY

Although there is a growing body of literature on how to integrate 21st century skills in the curriculum, little is known about integration of 21st century skills in the Bhutanese school and higher education settings. This study sets out to explore the possibility of integrating 21st century skills in the Bhutanese curriculum.

First, this study investigated a few Bhutanese school curricula in depth to better understand which elements of 21st century skills are integrated and how much integration can be seen in the existing curriculum. A variety of methods were employed, including document analysis, and a focus group discussion between team members and the participating countries. Second, a feasibility analysis was conducted through online interaction, discussion, and assignments to explore the existing challenges and issues related to education within the participating countries.

The study highlighted that the general grade eight science curriculum as well as particular subjects' curriculum (Social studies and English) has some elements of 21st century skills reflected in the learning outcomes and assessment.

However, most of the learning outcomes, instruction and assessments mentioned in the grade 8 general science and other school curricula failed to illustrate in detail how these skills should be aligned and operationalized. Furthermore, the skill of collaboration was minimally addressed. The report also indicated that such issues can be attributed to the lack of required expertise in the curriculum development field and the lack of alignment between the school curriculum and courses offered at the colleges of education. Thus, the study recommends the need for enhancement of skills and revamping of school curriculum and programmes offered in the colleges of education as they are imperative for successful education.

To continue the work started in this Learning Cycle, further support is needed to implement the proposed strategic plan described in this paper which will raise the quality of teaching and learning materials with respect to 21st century skills.

TEAM COMPOSITION AND CONTEXT

- Gender and capacity are equally represented in the team.

- Two curriculum specialists from the Department of Curriculum and Professional Development (Mr. Bhoj Raj Rai and Mr. Phuntsho Norbu) have a detailed understanding of curriculum development, especially conducting needs analysis, developing new curricula, reviewing existing curricula and orienting schoolteachers to curricula.

- Miss Dorji Dema has a background in assessment, with knowledge of constructing assessment tests and tools at the school level and facilitating assessment workshops for schoolteachers.

- Kinley Seden is a teaching faculty at Samtse College of Education and has knowledge in teaching, learning, assessment and research. She also has a deep knowledge of curriculum planning, review and analysis.

- Mr. Bishnu Bhakta Mishra is UNICEF Bhutan's education officer. He views education as sector-wide programme rather than using a silo approach. His critical views on curriculum, pedagogy and assessment have brought better alignment to the three pillars.
- All five core members have a longstanding connection with teachers and principals of schools, relevant stakeholders from the Ministry and presidents of the colleges of the Royal University of Bhutan. These connections will benefit the engagement of key stakeholders and aid in the recruitment of additional team members.

- The core team members, along with new recruits from among relevant stakeholders from the Ministry of Education, the Bhutan Council for School Examination and Assessment, the Royal University of Bhutan, the Teacher Professional Support Division (TPSD) and especially the Policy and Planning Division will make the team formation stronger. Further, funding support from KIX and UNICEF will help take the knowledge gained from this initiative to the next level.

VISION AND MISSION STATEMENTS

Vision

Like Vietnam and Nepal, Bhutan lacks vision and mission statements specific to 21st century skills (21CS). However, the vision statement for Bhutan outlined on the official website of the Ministry of Education clearly reflects 21CS. The vision statement outlines an education system that fosters excellence and empowers the Bhutanese to be responsible, caring citizens who are successful lifelong learners driven by a spirit of innovation, creativity and enterprise, so as to foster happiness of the living world and protect the organic ecosystem and the non-living environment.

Mission

The mission statement aligns well with the vision statement for the integration of 21CS:

1. Develop sound educational policies that enable the creation of a knowledge-based Gross National Happiness (GNH) society.

2. Provide equitable, inclusive and quality education and lifelong learning opportunities to all children and harness their full potential to become productive citizens.

3. Equip all children with appropriate knowledge, skills, and values to cope with the challenges of the 21st century.

These 21CS have been integrated into the curriculum since 2016, and assessment has focused on testing competencies. A more substantial move was made with the introduction of the New Normal Curriculum from class pre-primary to grade twelve, which is a competency-based curriculum. The curriculum has a component in which the children are expected to achieve a desired learning outcome in the form of competency. The competency consists essentially of cognitive competency (head), performance competency (hand—21CS) and behavioural competency (heart). The desired competency can be achieved through content delivery designed with appropriate pedagogy and with an alignment of assessment techniques and tools. At the teacher education level, as per the Postgraduate Diploma in Education Programme Definitive Document (2020), a separate teaching method module has been created that clearly reflects 21CS, including critical thinking, creativity, collaboration and communication. This module is the outcome of a recent review of postgraduate diploma in education programmes. In addition, the curriculum, pedagogy and assessment components of the other modules offered in the postgraduate programmes reflect certain portions of 21CS.

NEEDS ANALYSIS

Grade eight general science emphasises the required knowledge, skills and values of the lower secondary school curriculum. The National School Curriculum Framework (NSCF) has three important strands: 1. life science (biology), 2. materials and their properties (chemistry), and 3. physical process (physics). The NSCF was recently revised to make it more competency-based and appropriate for 21st-century learning needs and to incorporate the expectations outlined in the Royal Kasho (the Royal Decree). The Royal Kasho stipulates the need for alignment in the curriculum, pedagogy, learning process and assessments in view of the challenges and opportunities of the 21st century, with a specific focus on developing core skills such as critical thinking, creative thinking, lifelong learning, problem-solving, inquisitiveness, interactive skills, collaborative skills, and technological skills.

The 21CS are embedded in the National School Curriculum Framework (NSCF) and Competency Based Assessment Framework (CBAF) through the inclusion of 18 core goals for curriculum: the students will be mindful; caring; reflective; disciplined; active and informed; knowledgeable; creative; industrious; intellectually competent; communicative; skilful and productive; self-directed and lifelong learners; individually confident; have a strong sense of family, community and national values; spiritually sound with a strong character; and physically and mentally fit, and they will show leadership competence and world readiness. Seven key competencies are also included for assessment: spirituality and values; language; transversal competence; industry; enterprise; sustainable living, health and wellbeing; and digital skills (NSCF, 2020) along with nine student attributes (knowledge and understanding; intellectual competence; communicative competence; enduring habits of lifelong learning; family, community and national values; spirituality and character; physical wellbeing; leadership competence; and world readiness) (CBAF, 2019). The general grade eight science curriculum, as well as other school curricula, has some elements of 21CS reflected in the learning outcomes and assessments. However, most of the learning outcomes, instruction and assessments mentioned in the grade eight general science and other school curricula have failed to illustrate in detail how these skills should be aligned and operationalised. Furthermore, the collaborative aspect of these skills is addressed only minimally.

These issues have been attributed to a lack of necessary expertise in the curriculum development field and a lack of alignment between the school curriculum and courses offered at the colleges of education. Such issues indicate the need for the enhancement of skills and revamping of school curricula and programmes offered in the colleges of education, which are imperative for successful education.

The needs analysis also found that there is a need for relevant stakeholders to come together in bringing alignment to the curriculum, for example, by identifying innovative pedagogical strategies for enhancing growth, identifying opportunities for skills in the curriculum, integrating and layering skills into the curriculum, and reviewing existing and potential classroom and assessment activities. However, in taking this forward, the needs analysis foresaw some challenges similar to those experienced in Vietnam and Nepal. Vietnam and Nepal, in their presentations, reported issues such as limited facilities, lack of innovative practices, large classroom sizes and insufficient training. Similarly, such issues were noted in the Bhutanese context, along with financial and human resource constraints. Lack of human capacity and financial constraints have prevented the agencies in Bhutan from bringing a major overhaul to the curriculum, pedagogy and assessment practices.

SKILLS DEFINITIONS AND FRAMEWORK

Critical thinking, creative thinking and collaboration skills are prioritised in the curriculum. However, collaboration skills seem to be less visible across the curriculum. These skills are reflected in the NSCF, CBAF and curriculum for each subject/ learning area.

The main skill focused on by the Bhutan team was critical thinking.

Participant 1 defined critical thinking skills as being able *"to understand, comprehend, apply information to new situations and also being able to analyse information by providing valid justifications and at the same time maintaining logical connections between the arguments."*

Participant 2 defined them as *"thinking logically based on experiences and new expectations to solve problems and generate ideas."*

Participant 3 said, *"[C]ritical thinking is to analyse a situation in order to make a judgment."*

Participant 4 stated,*"[C]ritical thinking [is] understanding beyond what is written or spoken, understanding in between the lines, understanding what has not been said, motifs, and diverse perspectives. Critical thinking means filtering out facts from fiction and understanding what is true, authentic and genuine in contrast to personal opinions and biased perspective. Critical thinking for me means challenging established beliefs, facts or positions with new evidence and broadening perspectives."*

Upon analysis of the four definitions in relation to ACER's definitions, our definitions reinforced some of ACER's ideas. However, the analysis also indicates that the team failed to distinguish the skill aspects located within the three different skills of collaboration, critical thinking and creative thinking appropriately. Moreover, the analysis revealed that each of the members had only minimal understanding of the skills.

The definitions and frameworks shared by ACER broadened our ideas about the skills and took us beyond our initial understanding. ACER's definition extended and deepened our understanding of critical thinking. It taught us that it is not only about analysing a situation and finding a solution, but also about assessing the effectiveness of the solution. Additionally, it taught us that critical thinking is not necessarily only for literature students (literary criticism) but can also be mainstreamed across the curriculum's subjects.

The ACER definition further deconstructed critical thinking and provided us with strands and sub-strands (aspects) that can be taught consciously and assessed. For example, one participant said he was not aware that decision-making entailed *testing and monitoring and implementation.* Another participant stated that it was good to learn about *discriminating among information based on accuracy, credibility, currency and reliability*. Furthermore, another participant pointed out that ACER's definition highlighted *analysis and evaluation of information* as the most important or essential skill under critical thinking. These aspects, according to him, are crucial for the children to develop, but it is difficult to assess them.

Although our understanding of critical thinking was confined to a few ideas, we were happy to be exposed to ACER's comprehensive definition. The definitions provided by ACER will surely guide us in improving the teaching, learning and assessment components of our curriculum.

Furthermore, upon observing the definitions given by members from other countries, we understood that we have similar perspectives and views. For example, one of the participants from Vietnam stated that their definition of critical thinking stopped at decision making and lacked the aspect of testing and monitoring implementation. The participant observed that ACER's definition was much more comprehensive and better structured, especially with regard to its sub-strands (aspects). The participant felt that it was very specific and clear in each step of forming and developing critical thinking capacity. Similarly, the participant asserted that the sub-strands (aspects) could be used to identify teaching and evaluation strategies.

SKILLS AUDIT, ALIGNMENT TABLE, AND HEAT MAP

The New Normal Curriculum (NNC) developed by Department of Curriculum and Professional Development (DCPD) is competency-based and information and communication technology (ICT)-driven, as well as textbook- less, among other attributes. It aims to move away from a prescriptive approach towards a more competency-based approach. Likewise, the Bhutan Council for School Examinations and Assessment (BCSEA) has just completed the National Education Assessment Framework (NEAF), incorporating some 21CS in a few areas (literacy, numeracy, and languages—English and Dzongkha). However, the agency has not yet conducted the first National Education Assessment for grade three (scheduled for November–December this year). The next cycle of National Education Assessment (NEA) will be three years later, at grade six. The last grade to be assessed will be six years later. Only the NEA report at grade nine (when children are 15 years old) will indicate whether they are equipped with some 21CS for employability. In the high-stakes examinations for the two terminal classes, grade 10 and grade 12, BCSEA has begun testing the learners with higher cognitive levels of 36% to 40% on competency-based questions (CBQ). The skills are also being assessed in practical subjects like science, social science and the newly introduced Technical Vocational Education and Training (TVET) curriculum in seven pilot schools. This shows that both school curricula and assessments have made their move towards a competency-based approach. In the recent review of the Postgraduate Diploma in Education (PgDE) at one of the colleges of education, some new aspects were introduced. For example, one of the outcomes of the review was the introduction of teaching methods—a new module focusing on four core teaching methods (the 4Cs: differentiated instruction, 7E (Elicit, Engage, Explore, Explain, Elaborate, Evaluate, and Extend), and skills such as Introductory Procedure and Closure (IPC), using teaching learning materials and giving instructions, questioning, and classroom use of language). Likewise, new pedagogies appropriate to elective modules have been incorporated.

Although the NNC and assessment were competency based and some new pedagogies had been introduced into the PgDE programme, upon analysis, we observed that the 21CS addressed in the curriculum, pedagogy and assessment were minimal, and there was a lack of alignment among the three. For example, upon analysis of the integration of creative thinking, critical thinking and collaboration skills in

Figure 1: Heat map produced after skills audit

	Learning area 1: Science strand 1 - Life science activities: explore, identify, investigate, hypothesis, conduct and inference.	**Learning area 1:** Science strand 2 - Materials and their properties activities: explore, investigate, compare, hypothesis, experiment, inference, conclusion, and identify	**Learning area 1:** Science strand 3 - Physical process activity: Explore, investigate, interpret, construct, present, evidence, calculate, demonstrate, verify, design an activity, and formulate	**Learning area 2:** Social Studies strand: Exploration of festivals activity: explore, identify, investigate, interview, field trip, interpret, project and work.	**Learning area 3:** English strand: Listening and speaking, reading and writing activities: drama, role play, story telling, poem recitation, essay writing, debate, portfolio and discussion.
Skill Critical Thinking	40%	30%	40%	70%	60%
Skill Creative Thinking	30%	30%	30%	20%	20%
Skill 3 Collaboration	20%	10%	10%	10%	20%
Others	10%	20%	20%		

Please note: The colours correspond to level of coverage as analyzed by the team. The colours are not directly related to the numbers within the boxes. If the team analyzed the level of coverage present is little to none, the box is coloured red. If the team analyzed that there is some coverage the colour of the box is yellow and if the team analyzed that there is lots of coverage the colour of the box is green.

three learning areas in the school—science, social studies and English—we found that 21CS are currently embedded in the learning outcomes and tasks in all the specific learning areas. The level heat map[1] showed a certain amount of alignment in the first learning area (science), strand 1 (creative 40% and critical 30%) and strand 2 (creative 30% and critical 30%) of the existing curriculum, with the integrated skills and the collaboration element being observed in strand 1 of the existing curriculum (20%). A moderate amount of alignment was observed in strand 3 of the existing curriculum (10%). There was great alignment observed in the strand of learning area 2 of social studies (creative 70%, critical 20% and collaboration 10%) and learning area 3 of English of the existing curriculum (creative 60%, critical 20% and collaboration 20%). Likewise, at the college level, the skills addressed were minimal and lacked alignment. This indicates that the stakeholders need to follow up to bring alignment to the curriculum, pedagogy, and assessment.

Moreover, although TPSD provides professional development to teachers, the pedagogies are wider and largely driven by the colleges of education (RUB). Thus, the team felt that the colleges of education (SCE and PCE) must review their pedagogies and align them to deliver 21CS. Similarly, the team felt that the curriculum, pedagogy, and assessment at all levels required revamping.

1 The heat map outlines where you want to embed skills (and which skills) into key learning areas and where across the schooling years. The 'heat map' allows systems to identify where 21st century skills focus should be in the curriculum, and to identify where additional skills integration might be most useful.

STRATEGIC PLAN

In the past, curriculum planning and review was carried out at the national level by engaging a few teachers from the field and members of the DCPD . However, such an approach was certainly not seen as effective, as only a few were invited to participate in such large forums. Moreover, it lacked the involvement of various stakeholders who could provide critical perspectives. Considering this gap and these issues, the team decided to work collaboratively to further carry out curriculum auditing, to review and audit the curriculum with the involvement of all the curriculum stakeholders, and to integrate 21CS into the curriculum as strongly as possible, considering the challenges faced in this integration, such as budget limitation, shortage of expertise in relevant fields and the dilution of information in the rollout.

In carrying out the work, the strategic plan will follow the three phases of curriculum development: planning and development, implementation and evaluation (Ornstein & Hunkins, 1998; Toohey, 1999).

In the first phase (planning and development), the core team members will do a thorough needs analysis of the existing curriculum, pedagogy and assessment, including identifying innovative pedagogical strategies for enhancing growth, identifying opportunities for skills in the curriculum, integrating and layering skills into curriculum, and reviewing existing and potential classroom and assessment activities in alignment with the requirement of education policies and mandates outlined in the recent Royal Kasho. Such a needs analysis is required for successful curriculum reform. In the audit, the core team members will identify relevant stakeholders from the Ministry of Education, BCSEA and the Royal University of Bhutan (RUB) to form a strong working team that will oversee all activities, ensure alignment, and accomplish the work successfully. In this phase, the core team members will initiate dialogue with MoE and RUB and work towards collaborating with relevant stakeholders. After the collaboration, the core team members will facilitate workshops for the members, especially on 21CS. Such an initiative will help the core team members in utilising the knowledge and skills gained from the certificate course on the integration of 21CS and also in realising the purpose of the project. In addition, the team will present their findings of the needs analysis to the relevant stakeholders. Upon presentation, the team will then consult and engage fully in the redevelopment of the school curriculum, curriculum of the colleges of the Royal University of Bhutan, and assessment on the basis of the auditing report and will then discuss and decide how to embed 21CS in the curriculum, pedagogy and assessment at all levels (school, BCSEA, and the RUB colleges). The team will refine and ensure constructive alignment among learning outcomes, curriculum, pedagogy and assessment in relation to 21CS. After the refinement, the team will organise a nationwide awareness campaign to reorient relevant stakeholders towards the newly revised curriculum. In this phase, the team will also ensure that the required materials and support, including human and financial capacities, are available to ensure a smooth workflow.

In the second phase (implementation), the newly revised curriculum will be implemented after seeking expert appraisal. In addition, in ensuring smooth and effective implementation, the teachers, BCSEA members and faculty members of RUB colleges will be thoroughly oriented and trained to develop their capacities in integrating skill development into classroom practices, delivering and using classroom-based 21CS assessment, and using, developing and accessing learning resources and also to build their capacity to conduct alignment checks and render support to each other. Furthermore, the support materials and learning resources, such as curriculum guide, instructional guides and assessment guides, will be made available to teachers, teacher educators and other relevant agencies.

In the final phase (evaluation), the curriculum will be evaluated before its implementation by seeking expert appraisal. The curriculum will be further revised by incorporating the feedback received from this appraisal. Furthermore, upon implementation, to evaluate the effectiveness of the revised curriculum, a study will be conducted to determine the efficacy of the revised curriculum. Based on the outcome of the study, the curriculum will be further revisited. In addition to the study, survey questionnaires will be administered and feedback collected from the stakeholders, and changes will be considered accordingly to further improve the curriculum.

LESSONS LEARNT

Against a background of curriculum, pedagogy and assessment planning and reviewing, a need for such a learning cycle was timely and intensely felt. Thus, we ensured that we were all motivated to learn as much as we could from the content of this learning cycle. The learning cycle had useful guides, resource materials, PowerPoint presentations in the form of videos and slides with individual and group activities, cross-country discussion, and interactive elements that were useful and engaging. We were all fortunate to be part of this useful learning cycle. The learning cycle also provided us with many insights and ideas that were pertinent and useful for curriculum planning. Participating in this learning cycle has helped shape both personally and professionally, and knowledge and skills gained from the learning cycle will greatly contribute to addressing issues related to curriculum planning and review, both at the national and institutional levels, as well as to the overall improvement of the quality of education. For example, one of the participants has already used some ideas from the learning cycle in developing one of her higher education curriculum modules. This participant found the learning cycle extremely rewarding.

In addition, the knowledge provided to us on 21CS has truly broadened our thinking. We have gained some ideas on skill integration into the curriculum, assessment and pedagogy. We also learnt varied skills related to curriculum refinement, such as auditing skills, heat map planning and strategic planning. We found the individual and group activities challenging, interesting and practice oriented. These activities taught us the actual process of curriculum refinement and review of skills. The course facilitators were knowledgeable, encouraging and helpful. The feedback and comments we received on our presentation were useful and apt.

In addition to the content of the learning cycle, the cross-country learning was found to be useful and insightful. Through cross-country interaction, we were able to learn about some of the educational challenges and issues that each participating country, Afghanistan, Cambodia, Maldives, Nepal, Papua New Guinea and Vietnam, encountered in the process of reviewing their curriculum. Challenges, such as large classroom sizes, limited facilities, lack of innovative practices, shortage of training/orientation and budget constraints, were noted in our context and others. For example, Nepal stated in their presentation that they had difficulty in shifting assessment from summative to formative. Similarly, in Bhutan, one of the PhD thesis studies pointed out that teachers have misconceptions about formative assessment (Utha, 2015). Such misconceptions occur when teachers are not fully oriented. Hence, cross-country learning has opened our eyes to the education, curriculum and challenges of other countries and enabled us to view our challenges from their perspectives.

REFERENCES

BCSEA. (2019). *National education assessment framework*. Bhutan Council for Secondary Examination and Assessment.

MoE. (2020). *The National School Curriculum Framework* (Ninth Draft). Ministry of Education.

Ornstein, C. A., & Hunkins, P. F. (1998). *Curriculum: Foundations, principles, and issues.* Pearson.

REC. (2021). *New Normal Curriculum: Instructional guide (general science VIII)*. Royal Education Council.

REC. (2021). *New Normal Curriculum: Instructional guide (social science VIII)*. Royal Education Council.

REC. (2021). *New Normal Curriculum: Instructional guide (English VIII)*. Royal Education Council.

SCE. (2020). *Postgraduate diploma in education: Definitive programme document*. Samtse College of Education.

Toohey, S. (1999). *Designing courses for higher education.* McGraw-Hill Education.

Utha, K. (2015). *Formative assessment practices in Bhutanese secondary schools and its impact on quality of education.* Doctoral thesis. Aalborg University, Denmark.

ANNEX 1

DETAILED NEEDS ANALYSIS

NEEDS ANALYSIS			
Sl.No	**Alignment Steps**	**Status (completed, underway, not yet started, other)**	**Comments/Detail**
1.	Audit existing curriculum	Completed	
2.	Audit existing assessment (s)	Completed	
3.	Identify pedagogical strategies for enhancing growth	Underway	Teacher Professional and Support Division (TPSD) under the Ministry of Education (MoE), oriented all the teachers of Bhutan on Transformative Pedagogies and English for communication. Implementation of Bhutan Professional Standards for Teachers (BPST) is an ongoing process, and the timeline goes up to 2023. Not all the Focus Areas are being implemented now. Some 12 focus areas are contingent upon teacher capacity development, infrastructure enhancement and other structural bottlenecks.
4.	Identify opportunities for skills in curriculum	Ongoing	The New Normal Curriculum (NNC) developed by REC is competency-based and ICT-driven as well as textbook less, among others. Moving away from prescriptive approach to a more competency-based approach.
5.	Integrate and layer skills into curriculum	Ongoing	Royal Education Council (REC)
6.	Identify opportunities for skills in assessment(s)	Completed	Bhutan Council for School Examinations and Assessment (BCSEA) has just completed the National Education Assessment Framework NEAF) incorporating some 21st century skills in few areas (literacy, numeracy, Languages-English and Dzongkha). However, the agency is yet to conduct the first National Education Assessment for grade three (scheduled for November-December this year). The next cycle of National Education Assessment (NEA) will be three years down the line at grade six. Then the terminal grade that will be assessed will be six years later. Only the NEA report at grade nine (when children are 15 years old) will indicate whether they are equipped with some 21st century skills for employability. In the high-stake examinations for the two terminal classes, X and XII, BCSEA started testing the learners with higher cognitive level of 36% to 40% competency-based questions (CBQ). The skills are also being assessed through the conduct of practical assessments for the subjects like science, social science and the newly introduced Technical Vocational Education and Training (TVET) curriculum in seven pilot schools. Now the new normal curriculum is competency based, the assessment mode will be shifted more towards competency-based assessment at all levels of school education.

NEEDS ANALYSIS			
Sl.No	**Alignment Steps**	**Status (completed, underway, not yet started, other)**	**Comments/Detail**
7.	Review existing and potential classroom activities	Underway	Work has started with TPSD piloting classroom practices of teachers based on Bhutan Professional Standard for Teachers (BPST). Teacher performance (Individual Work Plan, IWP) is now tied to their demonstration of specific competencies against the selected focus areas within a given standard
8.	Develop assessment(s) to gather data	Completed	BCSEA initiated online result processing system. NEA gathers data on quality of learning at two terminal levels of key stage I and II. BCSEA has completed the first draft of Competency-based Assessment Framework that includes some of the 21st century skills such as critical thinking, problem solving, communication, collaboration, creative skills etc.
9.	Develop teaching resources	underway	Online Teaching Learning Materials by MoE For example, which ones? Are you talking about the Learning Management System that MoE is working on? I am not sure what specific teaching resources are being developed as regards to 21st century skills. New normal curriculum has suggested quite a few teaching learning resources, both online and offline. There are also suggested lists of digital resources in Learning Management System which is a work in progress by REC and MoE.
10.	Review Pedagogical training	Other: study on the effectiveness of pedagogies training is not yet done	TPSD needs to do follow up. This training focused on Kagan's Cooperative Learning strategies. However, I think pedagogies in our system are wider and largely driven by the Colleges of Education (RUB). SCE and PCE have reviewed their pedagogies and aligned them to deliver 21st century skills. For example, for PgDE teaching methods, a new module has been developed which focuses on 4 core teaching methods (4C's, differentiated instruction, 7E, cooperative learning) and skills like IPC, Using Teaching Learning Materials and giving instruction, questioning, and classroom use of language). Likewise, respective elective modules have incorporated methods appropriate to their module. For example, Economics has Case study, Local to Global, Design Thinking, Inquiry Learning, Lesson Study, Project Work, etc.

KIX EAP Learning Cycle Case Study, March 2022

20, Rue Rothschild I P.O. Box 1672
1211 Geneva 1, Switzerland
+41 (0) 22 908 45 47
norrag.kix@graduatenstitute.ch

@KIXEAP

norrag.network

norrag.org/kix-eap

gpekix.org/regional-hub/kix-eap